STIC Search Report
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STIC Database Tracking Number: 125357

TO: Ralph J Gitomer **Location: 3d65 / 3e71** **Tuesday, June 29, 2004** **Art Unit: 1651** **Phone: 272-0916** **Serial Number: 10 / 041661**	**From: Jan Delaval** **Location: Biotech-Chem Library** **Rem 1A51** **Phone: 272-2504** **jan.delaval@uspto.gov**

Search Notes

Access DB# [illegible]

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: R GITOMER Examiner # :_____ Date: 6/22/04
Art Unit: 1651 Phone Number 30_____ Serial Number: 10/041,661
Mail Box and Bldg/Room Location: 3C71 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

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Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: [illegible]

Inventors (please provide full names): _____

Earliest Priority Filing Date: _____

***For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.**

JAN

1-11

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STAFF USE ONLY	**Type of Search**	**Vendors and cost where applicable**
Searcher: [illegible]	NA Sequence (#)_____	STN ✓
Searcher Phone #: 22504	AA Sequence (#)_____	Dialog _____
Searcher Location: _____	Structure (#) _____	Questel/Orbit _____
Date Searcher Picked Up: 6/29	Bibliographic ✓	Dr.Link _____
Date Completed: 6/29	Litigation _____	Lexis/Nexis _____
Searcher Prep & Review Time: _____	Fulltext _____	Sequence Systems _____
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FILE LAST UPDATED: 28 Jun 2004  (20040628/ED)

 This file contains CAS Registry Numbers for easy and accurate
 substance identification.


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L94  ANSWER 1 OF 19  HCAPLUS  COPYRIGHT 2004 ACS on STN
AN   2004:252741  HCAPLUS
DN   140:283896
ED   Entered STN:  26 Mar 2004
TI   Optical biosensors and methods of use thereof
IN   Waggoner, Alan S.; Armitage, Bruce A.; Brown, William E.
PA   Carnegie Mellon University, USA
SO   PCT Int. Appl., 104 pp.
     CODEN: PIXXD2
DT   Patent
LA   English
IC   ICM  G01N
CC   9-1 (Biochemical Methods)
FAN.CNT 1
     PATENT NO.        KIND  DATE           APPLICATION NO.  DATE
     ---------------   ----  --------       ---------------  --------
PI   WO 2004025268     A2    20040325       WO 2003-US29289  20030915
         W:  AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
             CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
             GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,
             LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH,
             PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ,
             UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD,
             RU, TJ, TM
         RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG,
             CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC,
             NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
             GW, ML, MR, NE, SN, TD, TG
PRAI US 2002-410834P   P     20020913
OS   MARPAT 140:283896
AB   A fundamental biosensor for detection of biol. or environmental
     analytes is provided.  The biosensor comprises a selectivity
     component for recognition of a target mol. and a reporter mol. that is
     sensitive to changes in the microenvironment.  Methods of using
     the biosensor are also provided, including in vivo and in vitro
     applications using biosensor mols. that optionally may be
     attached to a surface.
```

ST optical **biosensor** target recognition reporter microenvironment; biol environmental analysis optical **biosensor**

IT Escherichia coli
(0157:H7, as biol. warfare agent, detection of; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Hemagglutinins
Proteins
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified); RCT (Reactant); ANST (Analytical study); BIOL (Biological study); RACT (Reactant or reagent); USES (Uses)
(A, as chemical handle on **biosensor** for use in isolating or immobilizing **biosensor**; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Disease, animal
(Ciguatera, as contaminant, detection of; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Toxins
RL: ANT (Analyte); ANST (Analytical study)
(Coprius artemetaris as contaminant, detection of; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Proteins
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified); RCT (Reactant); ANST (Analytical study); BIOL (Biological study); RACT (Reactant or reagent); USES (Uses)
(G, as chemical handle on **biosensor** for use in isolating or immobilizing **biosensor**; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Proteins
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified); RCT (Reactant); ANST (Analytical study); BIOL (Biological study); RACT (Reactant or reagent); USES (Uses)
(MBP (maltose-binding protein), as chemical handle on **biosensor** for use in isolating or immobilizing **biosensor**; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Signal peptides
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(NLS (nuclear localization signal), as chemical handle on **biosensor** for use in isolating or immobilizing **biosensor**; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Polysulfones, uses
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(alkylene derivs., as substrate; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Polycyclic compounds
RL: ANT (Analyte); ANST (Analytical study)
(aromatic hydrocarbons, as hazardous substance, detection of; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Cleaning solvents
Dermatophagoides
Mold (fungus)
Odor and Odorous substances
Pollen

Refrigerants
Solvents
(as air pollutant, detection of; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Tobacco smoke
(as air pollutant; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Asbestos
Heavy metals
Volatile organic compounds
RL: ANT (Analyte); ANST (Analytical study)
(as air pollutant; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Alphavirus
Arenavirus
Brucella
Burkholderia mallei
Burkholderia pseudomallei
Chlamydia psittaci
Coxiella burnetii
Eastern equine encephalitis virus
Ebola virus
Filovirus
Francisella tularensis
Hantavirus
Lassa virus
Machupo virus
Marburg virus
Nipah virus
Rickettsia prowazeki
Variola major virus
Venezuelan equine encephalitis virus
Western equine encephalitis virus
Yersinia pestis
(as biol. warfare agent, detection of; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Signal peptides
Thioredoxins
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified); RCT (Reactant); ANST (Analytical study); BIOL (Biological study); RACT (Reactant or reagent); USES (Uses)
(as chemical handle on **biosensor** for use in isolating or immobilizing **biosensor**; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Chemical warfare agents
(as chemical warfare agent, detection of; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Cannabinoids
RL: ANT (Analyte); ANST (Analytical study)
(as chemical warfare agent, detection of; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Adenoviridae
Amanita
Astrovirus
Bacillus anthracis
Bacillus cereus

Brucella melitensis
Calicivirus
Campylobacter jejuni
Clostridium botulinum
Clostridium perfringens
Cryptosporidium parvum
Cyclospora cayetanensis
Entamoeba histolytica
Giardia lamblia
Hepatitis A virus
Listeria monocytogenes
Norwalk-like virus
Parvovirus
Rotavirus
Salmonella
Shigella
Staphylococcus aureus
Toxoplasma gondii
Trichinella spiralis
Vibrio cholerae
Vibrio parahaemolyticus
Vibrio vulnificus
Yersinia enterocolitica
Yersinia pseudotuberculosis
(as contaminant, detection of; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Nitrites
RL: ANT (Analyte); ANST (Analytical study)
(as contaminant, detection of; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Parasite
(as food contaminant, detection of; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT **Dyes**
(as reporter mols.; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Chemiluminescent substances
Fluorescent substances
(as reporter; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT **Fluoropolymers**, analysis
RL: ANT (Analyte); DEV (Device component use); TEM (Technical or engineered material use); ANST (Analytical study); USES (Uses)
(as substrate and as detectable chemical warfare agent; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Drug delivery systems
Films
Plates
(as substrate; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Alloys, uses
Fluoropolymers, uses
Polycarbonates, uses
Polyimides, uses
Zeolites (synthetic), uses
RL: DEV (Device component use); TEM (Technical or engineered material

use); USES (Uses)
(as substrate; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Aptamers
(as target recognition component; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Antibodies and Immunoglobulins
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified); DEV (Device component use); TEM (Technical or engineered material use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(as target recognition component; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Aeromonas
Coliform bacteria
Coliphage
Cryptosporidium
Enterococcus
Escherichia coli
Giardia
Pathogen
(as water pollutant, detection of; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Spheres
(beads, as substrate; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Analysis
(biochem.; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT **Polymers**, uses
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(block, as substrate; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Disinfectants
(byproducts, as water pollutant, detection of; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Peptides, biological studies
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified); RCT (Reactant); ANST (Analytical study); BIOL (Biological study); RACT (Reactant or reagent); USES (Uses)
(calmodulin-binding, as chemical handle on **biosensor** for use in isolating or immobilizing **biosensor**; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Antibodies and Immunoglobulins
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified); DEV (Device component use); TEM (Technical or engineered material use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(camelized, as target recognition component; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Air pollution
(**carbon dioxide**, detection of; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Functional groups
(chemical handle, for use in isolating or immobilizing **biosensor** ; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)
IT Biological materials
(contaminants, detection of; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)
IT Glass, uses
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(controlled pore, as substrate; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)
IT Skin
(dander, as air pollutant, detection of; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)
IT Air pollution
Biological warfare agents
Cell
Drugs
Environmental pollution
Eubacteria
Fungi
Health hazard
Microorganism
Pesticides
Soil pollution
Virus
Water pollution
(detection of; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)
IT Antibodies and Immunoglobulins
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified); DEV (Device component use); TEM (Technical or engineered material use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(diabodies, as target recognition component; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)
IT Apparatus
(diagnostic instruments, as substrate; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)
IT Solid wastes
(dredging, as water pollutant, detection of; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)
IT Escherichia coli
(enterohemorrhagic, as contaminant, detection of; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)
IT Escherichia coli
(enterotoxigenic, as contaminant, detection of; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)
IT Toxins
RL: ANT (Analyte); ANST (Analytical study)
(enterotoxin B, Staphylococcal, as biol. warfare agent, detection of; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)
IT Toxins

RL: ANT (Analyte); ANST (Analytical study)
(epsilon, from Clostridium perfringen, sas biol. warfare agent, detection of; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Air pollution
(exhaust, detection of; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT **Biosensors**
(fiber-optic, reporter detectable by; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Cytometry
(flow, reporter detectable by; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Microscopes
(**fluorescence**, **epifluorescence**, reporter detectable by; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Antibodies and Immunoglobulins
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified); DEV (Device component use); TEM (Technical or engineered material use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(fragments, as target recognition component; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Virus
(hemorrhagic fever virus, as biol. warfare agent, detection of; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Antibodies and Immunoglobulins
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified); DEV (Device component use); TEM (Technical or engineered material use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(humanized, as target recognition component; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Prosthetic materials and Prosthetics
(implants, as substrate; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Medical goods
(instruments, surgical, as substrate; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Polyesters, uses
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(lactide, as substrate; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Medical goods
(medical devices, as substrate; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT **Sensors**
(microarray readers, reporter detectable by; **optical biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Disease, plant
(mildew, as air pollutant, detection of; optical **biosensors**

having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Antibodies and Immunoglobulins
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified); DEV (Device component use); TEM (Technical or engineered material use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(monoclonal, as target recognition component; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT **Cyanine dyes**
(monomethine or trimethine, as restriction **sensor dye** reporter mol.; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Transcription factors
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified); RCT (Reactant); ANST (Analytical study); BIOL (Biological study); RACT (Reactant or reagent); USES (Uses)
(myc, as chemical handle on **biosensor** for use in isolating or immobilizing **biosensor**; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Ricins
RL: ANT (Analyte); ANST (Analytical study)
(of Ricinus communis, as biol. warfare agent, detection of; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Environmental analysis
Glass substrates
Immobilization, molecular or cellular
(optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Amino acids, analysis
Carbohydrates, analysis
Cytokines
Hormones, animal, analysis
Nucleic acids
Peptides, analysis
Proteins
RL: ANT (Analyte); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study)
(optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT **Biosensors**
(optical; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Phosphates, analysis
RL: ANT (Analyte); ANST (Analytical study)
(organophosphates, as contaminant, detection of; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Air pollution
(particulate, detection of; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Azines
RL: ANT (Analyte); ANST (Analytical study)
(phenothiazines, as chemical warfare agent, detection of; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Aromatic hydrocarbons, analysis
RL: ANT (Analyte); ANST (Analytical study)

(polycyclic, as hazardous substance, detection of; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Transcytosis
(protein containing domain for, as chemical handle on **biosensor** for use in isolating or immobilizing **biosensor**; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Confocal laser scanning microscopy
Fluorometers
(reporter detectable by; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Molecular dynamics
Polarity
pH
(reporter **dye sensitive** to; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Scomberoides
(scombroid fish poisoning; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Environmental pollution
(sediment, as water pollutant, detection of; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Toxins
RL: ANT (Analyte); ANST (Analytical study)
(shellfish, as contaminant, detection of; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Antibodies and Immunoglobulins
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified); DEV (Device component use); TEM (Technical or engineered material use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(single chain, Fv, as target recognition component; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Inorganic compounds
Organic compounds, analysis
RL: ANT (Analyte); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study)
(small; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Materials
(template imprinted, as target recognition component; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Antibodies and Immunoglobulins
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified); DEV (Device component use); TEM (Technical or engineered material use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(tetrabodies, as target recognition component; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Shellfish
(toxins, as contaminant, detection of; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Antibodies and Immunoglobulins
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified);

DEV (Device component use); TEM (Technical or engineered material use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(tribodies, as target recognition component; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Microscopes
(two photon excitation, reporter detectable by; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Peptides, biological studies
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified); RCT (Reactant); ANST (Analytical study); BIOL (Biological study); RACT (Reactant or reagent); USES (Uses)
(type III secretion system-targeting, as chemical handle on **biosensor** for use in isolating or immobilizing **biosensor**; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT 6581-06-2, BZ
RL: ANT (Analyte); ANST (Analytical study)
(Agent BZ, as chemical warfare agent, detection of; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT 532-27-4, Chloroacetophenone
RL: ANT (Analyte); ANST (Analytical study)
(Agent CNC, Agent CNB, as chemical warfare agent, detection of; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT 675600-78-9, Chloropicrin-phenacyl chloride mixture
RL: ANT (Analyte); ANST (Analytical study)
(CNS, as chemical warfare agent, detection of; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT 50-00-0, Formaldehyde, analysis **124-38-9**, **Carbon dioxide**, analysis 630-08-0, Carbon monoxide, analysis 7446-09-5, Sulfur dioxide, analysis 10028-15-6, Ozone, analysis **10043-92-2**, Radon, analysis 10102-44-0, Nitrogen dioxide, analysis 11104-93-1, Nitrogen oxide, analysis 12624-32-7, Sulfur oxide
RL: **ANT (Analyte)**; **ANST (Analytical study)**
(as air pollutant; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT 505-60-2, Mustard 107231-12-9, Botulin
RL: ANT (Analyte); ANST (Analytical study)
(as biol. warfare agent, detection of; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT 24937-47-1, Poly arginine 25212-18-4, Poly arginine 26062-48-6, Poly L-Histidine 26854-81-9 28378-18-9 50812-37-8, Glutathione-S-transferase 98849-88-8, FLAG peptide
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified); RCT (Reactant); ANST (Analytical study); BIOL (Biological study); RACT (Reactant or reagent); USES (Uses)
(as chemical handle on **biosensor** for use in isolating or immobilizing **biosensor**; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT 50-37-3, LSD 55-86-7, Nitrogen mustard 74-90-8, Hydrogen cyanide, analysis 75-44-5, Phosgene 76-06-2, Chloropicrin 77-81-6, Tabun 96-64-0, Soman 107-44-8, Sarin 257-07-8, CR 329-99-7 382-21-8, Perfluoroisobutylene 437-38-7D, Fentanyl, compds. 503-38-8, Diphosgene 506-77-4, Cyanogen chloride 541-25-3, Lewisite 578-94-9, Adamsite 593-89-5, Methyldichloroarsine 598-14-1, Ethyldichloroarsine 696-28-6

712-48-1, Diphenylchloroarsine 1314-13-2, Zinc oxide, analysis
1341-24-8, Chloroacetophenone 1794-86-1, Phosgene oxime 2698-41-1, CS
3563-36-8, Sesqui mustard 7550-45-0, Titanium tetrachloride, analysis
7647-01-0, Hydrogen chloride, analysis 7782-50-5, Chlorine, analysis
7784-42-1, Arsine 10102-43-9, Nitrogen oxide (NO), analysis
23525-22-6, Diphenylcyanoarsine 25037-78-9, VE 35513-90-7, VM
50782-69-9, VX 70268-40-5 70288-88-9
RL: ANT (Analyte); ANST (Analytical study)
(as chemical warfare agent, detection of; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT 300-54-9, Muscarine 463-77-4D, Carbamic acid, compds. 520-52-5, Psilocybin 2552-55-8, Ibotenic acid 2763-96-4, Muscimol 4368-28-9, Tetrodotoxin 7440-28-0, Thallium, analysis 7440-31-5, Tin, analysis 7440-36-0, Antimony, analysis 7440-66-6, Zinc, analysis 7681-49-4, Sodium fluoride, analysis 51481-10-8, Vomitoxin
RL: ANT (Analyte); ANST (Analytical study)
(as contaminant, detection of; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT 50-29-3, DDT, analysis 50-32-8, Benzopyrene, analysis 53-70-3, Dibenz[a,h]anthracene 60-57-1, Dieldrin 75-01-4, Vinyl chloride, analysis 87-68-3, Hexachlorobutadiene 12789-03-6, Chlordane 18540-29-9, Chromium6+, analysis 56832-73-6, Benzofluoranthene
RL: ANT (Analyte); ANST (Analytical study)
(as hazardous substance, detection of; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT 7440-38-2, Arsenic, analysis
RL: ANT (Analyte); ANST (Analytical study)
(as pollutant, detection of; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT 7439-92-1, Lead, analysis 7439-97-6, Mercury, analysis
RL: ANT (Analyte); ANST (Analytical study)
(as pollutant; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT 57-12-5, Cyanide, analysis
RL: ANT (Analyte); ANST (Analytical study)
(as soil pollutant or chemical warfare agent, detection of; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT 67-64-1, Acetone, analysis 67-66-3, Chloroform, analysis 71-43-2, Benzene, analysis 79-01-6, Trichloroethylene, analysis 92-52-4D, 1,1'-Biphenyl, chloro derivs. 108-88-3, Toluene, analysis 127-18-4, Tetrachloroethylene, analysis 7440-39-3, Barium, analysis 7440-43-9, Cadmium, analysis
RL: ANT (Analyte); ANST (Analytical study)
(as soil pollutant, detection of; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT 9002-84-0, Poly(tetra)fluoroethylene
RL: ANT (Analyte); DEV (Device component use); TEM (Technical or engineered material use); ANST (Analytical study); USES (Uses)
(as substrate and as detectable chemical warfare agent; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT 7440-50-8, Copper, analysis
RL: ANT (Analyte); DEV (Device component use); TEM (Technical or engineered material use); ANST (Analytical study); USES (Uses)
(as substrate or as contaminant to be detected; optical **biosensors** having target recognition component and reporter

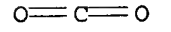
sensitive to changes in microenvironment)

IT 1303-00-0, Gallium arsenide, uses 1314-61-0, Tantalum oxide 1344-28-1, Alumina, uses 7429-90-5, Aluminum, uses **7440-06-4**, **Platinum**, uses 7440-21-3, Silicon, uses 7440-32-6, Titanium, uses 7440-44-0, Carbon, uses 7440-56-4, Germanium, uses 7440-57-5, Gold, uses **7631-86-9**, **Silica**, uses 9002-81-7, Polyoxymethylene 9002-88-4, Polyethylene 9002-98-6 9003-05-8, Polyacrylamide 9003-17-2, Polyvinylethylene 9003-53-6, Polystyrene 9011-14-7, Polymethyl methacrylate **9016-00-6**, **Polydimethylsiloxane** 12033-89-5, Silicon nitride, uses 13463-67-7, Titania, uses 14808-60-7, Quartz, uses 24937-79-9, Polyvinylidenedifluoride 25249-16-5 25585-20-0, Polymethacrylimide 25587-79-5, Polypropylethylene 31694-16-3 **31900-57-9**, **Polydimethylsiloxane** 59269-51-1, Polyvinylphenol
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(as substrate; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT 7723-14-0, Phosphorus, analysis
RL: ANT (Analyte); ANST (Analytical study)
(red, as chemical warfare agent, detection of; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT **124-38-9**, **Carbon dioxide**, analysis
10043-92-2, Radon, analysis
RL: **ANT (Analyte)**; **ANST (Analytical study)**
(as air pollutant; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

RN 124-38-9 HCAPLUS
CN Carbon dioxide (8CI, 9CI) (CA INDEX NAME)



RN 10043-92-2 HCAPLUS
CN Radon (8CI, 9CI) (CA INDEX NAME)

Rn

IT **7440-06-4**, **Platinum**, uses **7631-86-9**, **Silica**, uses **9016-00-6**, **Polydimethylsiloxane** **31900-57-9**, **Polydimethylsiloxane**
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(as substrate; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

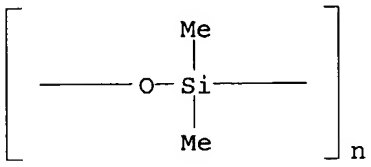
RN 7440-06-4 HCAPLUS
CN Platinum (8CI, 9CI) (CA INDEX NAME)

Pt

RN 7631-86-9 HCAPLUS
CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

O═Si═O

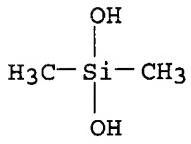
RN 9016-00-6 HCAPLUS
CN Poly[oxy(dimethylsilylene)] (8CI, 9CI) (CA INDEX NAME)



RN 31900-57-9 HCAPLUS
CN Silanediol, dimethyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 1066-42-8
CMF C2 H8 O2 Si



L94 ANSWER 2 OF 19 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2003:696473 HCAPLUS
DN 139:223324
ED Entered STN: 05 Sep 2003
TI **Colorimetric** artificial nose having an array of **dyes** and method for artificial olfaction
IN Suslick, Kenneth S.
PA Board of Trustees of the University of Illinois, USA
SO U.S. Pat. Appl. Publ., 51 pp., Cont.-in-part of U.S. Ser. No. 705,329.
CODEN: USXXCO
DT Patent
LA English
IC ICM G01N031-22
NCL 436169000; 422090000; 422058000
CC 80-2 (Organic Analytical Chemistry)
FAN.CNT 4

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2003166298	A1	20030904	US 2002-279701	20021024
	US 6368558	B1	20020409	US 2000-532125	20000321
	US 6495102	B1	20021217	US 2000-705329	20001103
	WO 2001071318	A1	20010927	WO 2001-US9092	20010321

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

PRAI US 2000-532125 A2 20000321
US 2000-705329 A2 20001103
WO 2001-US9092 A 20010321

AB The present invention involves an artificial nose comprising an array, the array comprising at least a **1st dye** and a **2nd dye** deposited directly onto a single support in a predetd. pattern combination, the combination of **dyes** in the array having a distinct and direct spectral absorbance or reflectance response to distinct analytes comprising one or more parent analytes or their derivs. In one embodiment, the invention further comprises an oxidizing source to partially oxidize at least one distinct parent analyte to at least one corresponding derivative analyte of said parent analyte, the array at least in part having a stronger distinct and direct absorbance or reflectance response to the derivative analyte than to the corresponding parent analyte.

ST colorimetric artificial nose array **dye** olfaction

IT **Colorimetric indicators**
Colorimetry
Dyes
Gas analysis
Gas sensors
Olfaction
Optical sensors
(colorimetric artificial nose with array of metalloporphyrin and **dye indicators** and method for artificial olfaction)

IT Metalloporphyrins
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(colorimetric artificial nose with array of metalloporphyrin and **dye indicators** and method for artificial olfaction)

IT **Fluoropolymers**, analysis
Polysiloxanes, analysis
RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST (Analytical study); USES (Uses)
(colorimetric artificial nose with array of metalloporphyrin and **dye indicators** and method for artificial olfaction)

IT 1936-15-8
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(Orange G; colorimetric artificial nose with array of metalloporphyrin and **dye indicators** and method for artificial olfaction)

IT 64-17-5, Ethanol, analysis 67-64-1, Acetone, analysis 67-66-3, Chloroform, analysis 68-12-2, Dimethylformamide, analysis 71-43-2, Benzene, analysis 75-05-8, Acetonitrile, analysis 75-09-2, Methylene chloride, analysis 108-91-8, Cyclohexylamine, analysis 109-06-8, 2-Methylpyridine 109-73-9, n-Butylamine, analysis 109-99-9, Tetrahydrofuran, analysis 110-86-1, Pyridine, analysis 111-26-2, Hexylamine 111-31-9, 1-Hexanethiol 111-47-7, Dipropyl sulfide 111-86-4, n-Octylamine 121-45-9, Trimethyl phosphite 122-52-1, Triethyl phosphite 998-40-3, Tri-n-butylphosphine 1322-36-7, Dodecanethiol
RL: ANT (Analyte); ANST (Analytical study)
(colorimetric artificial nose with array of metalloporphyrin and **dye indicators** and method for artificial olfaction)

IT 61-73-4, Methylene blue 72-48-0, Alizarin **76-59-5**, Bromothymol Blue 76-60-8, Bromocresol Green 76-61-9, Thymol Blue 92-62-6, 3,6-Acridineamine 115-40-2, Bromocresol Purple 143-74-8, Phenol Red 477-73-6, Safranine O 480-16-0, Morin **493-52-7**, Methyl Red 494-38-2, Acridine Orange Base 510-13-4 528-58-5, Cyanidin Chloride **547-58-0**, Methyl Orange 548-61-8, Para-Rosaniline Base 548-62-9, Crystal Violet 553-24-2, Neutral Red **573-58-0**, Congo Red 587-98-4, Metanil Yellow 617-19-6 633-00-1, Rosolic Acid 992-59-6, Benzopurpurin 4B **1733-12-6**, Cresol Red 2051-85-6, Sudan Orange G 2243-76-7, Mordant Orange 1 2580-56-5, Victoria Blue B 4430-20-0, Chlorophenol red 4569-86-2,

Methylene Violet 3RAX 6416-57-5, Fat Brown RR 6535-42-8, Fat Brown B 7385-67-3, Nile Red 10081-39-7, Reichardt's **Dye** 14074-80-7, 5,10,15,20-Tetraphenylporphyrinato zinc(II) 14172-90-8, 5,10,15,20-Tetraphenylporphyrinato cobalt(II) 14172-91-9, 5,10,15,20-Tetraphenylporphyrinato copper(II) 14641-64-6 19381-50-1, Naphthol Green B 29484-63-7, 5,10,15,20-Tetraphenylporphyrinato iron(III) 31482-56-1, Disperse Orange 25 36965-71-6, 5,10,15,20-Tetrakis(pentafluorophenyl)porphyrinato iron (III) chloride 38414-01-6, 5,10,15,20-Tetraphenylporphyrinato cobalt(III) 59388-92-0, 5,10,15,20-Tetraphenylporphyrinato manganese(III) 63692-18-2, 5,10,15,20-Tetraphenylporphyrinato chromium(III) 67574-57-6, 5,10,15,20-Tetraphenylporphyrinato tin (IV) 79231-60-0, 5,10,15,20-Tetraphenylporphyrinato ruthenium(II) 185460-51-9, 5,10,15,20-Tetrakis(2',6'-dihydroxyphenyl)porphyrinatozinc(II) 316803-86-8, 5-Phenyl-10,15,20-tris(2',6'-dihydroxyphenyl)porphyrinatozinc (II) 316803-89-1, 5-(Phenyl)-10,15,20-trikis(2',6'-**disilanyloxyphenyl**)porphyrinatozinc(II) 316803-93-7, 5,10,15-Trikis(2,6-**disilanyloxyphenyl**)-20-(2-hydroxy-6-silyloxyphenyl)porphyrinatozinc(II) 316803-95-9, 5,10,15,20-Tetrakis(2',6'-**disilanyloxyphenyl**)porphyrinatozinc(II)
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(colorimetric artificial nose with array of metalloporphyrin and **dye indicators** and method for artificial olfaction)

IT 146997-20-8 361191-65-3
RL: ARG (Analytical reagent use); DEV (Device component use); ANST (Analytical study); USES (Uses)
(colorimetric artificial nose with array of metalloporphyrin and **dye indicators** and method for artificial olfaction)

IT 84-69-5, Di-iso-butylphthalate 9002-84-0, Teflon 9003-53-6, Polystyrene **9016-00-6**, Di-Me **siloxane**, SRU **31900-57-9**, **Dimethylsilanediol homopolymer**
RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST (Analytical study); USES (Uses)
(colorimetric artificial nose with array of metalloporphyrin and **dye indicators** and method for artificial olfaction)

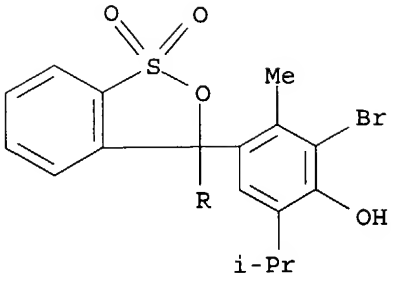
IT 100-52-7, Benzaldehyde, reactions 109-97-7, Pyrrole 3392-97-0, 2,6-Dimethoxybenzaldehyde 18162-48-6, Chloro-tert-**butyldimethylsilane**
RL: RCT (Reactant); RACT (Reactant or reagent)
(colorimetric artificial nose with array of metalloporphyrin and **dye indicators** and method for artificial olfaction)

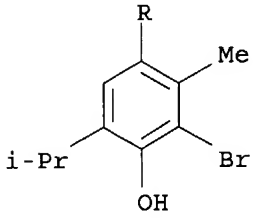
IT 145363-07-1P, 5,10,15-Tris(2,6-dimethoxyphenyl)-20-phenyl-21H,23H-porphine
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(colorimetric artificial nose with array of metalloporphyrin and **dye indicators** and method for artificial olfaction)

IT **18472-87-2**, Eosin Blue
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(phloxine B; colorimetric artificial nose with array of metalloporphyrin and **dye indicators** and method for artificial olfaction)

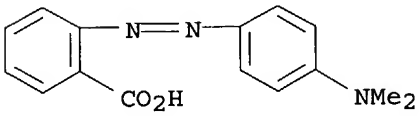
IT **76-59-5**, Bromothymol Blue **493-52-7**, Methyl Red **547-58-0**, Methyl Orange **573-58-0**, Congo Red **1733-12-6**, Cresol Red
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(colorimetric artificial nose with array of metalloporphyrin and **dye indicators** and method for artificial olfaction)

RN 76-59-5 HCAPLUS
CN Phenol, 4,4'-(1,1-dioxido-3H-2,1-benzoxathiol-3-ylidene)bis[2-bromo-3-methyl-6-(1-methylethyl)- (9CI) (CA INDEX NAME)

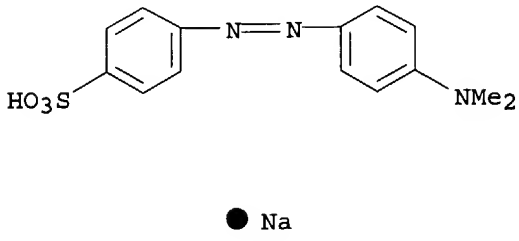




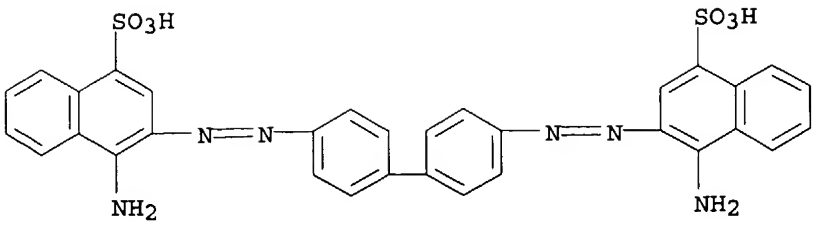
RN 493-52-7 HCAPLUS
CN Benzoic acid, 2-[[4-(dimethylamino)phenyl]azo]- (9CI) (CA INDEX NAME)



RN 547-58-0 HCAPLUS
CN Benzenesulfonic acid, 4-[[4-(dimethylamino)phenyl]azo]-, sodium salt (9CI) (CA INDEX NAME)

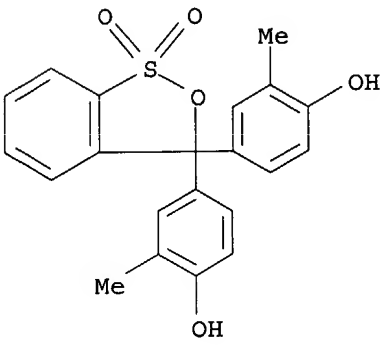


RN 573-58-0 HCAPLUS
CN 1-Naphthalenesulfonic acid, 3,3'-[[1,1'-biphenyl]-4,4'-diylbis(azo)]bis[4-amino-, disodium salt (9CI) (CA INDEX NAME)

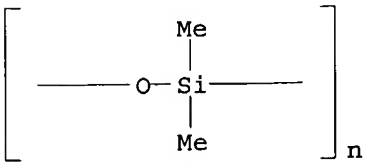


●2 Na

RN 1733-12-6 HCAPLUS
CN Phenol, 4,4'-(1,1-dioxido-3H-2,1-benzoxathiol-3-ylidene)bis[2-methyl-
(9CI) (CA INDEX NAME)



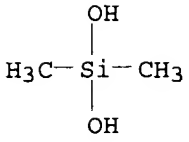
IT **9016-00-6**, Di-Me **siloxane**, SRU **31900-57-9**,
Dimethylsilanediol homopolymer
RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST
(Analytical study); USES (Uses)
(colorimetric artificial nose with array of metalloporphyrin and
dye indicators and method for artificial olfaction)
RN 9016-00-6 HCAPLUS
CN Poly[oxy(dimethylsilylene)] (8CI, 9CI) (CA INDEX NAME)



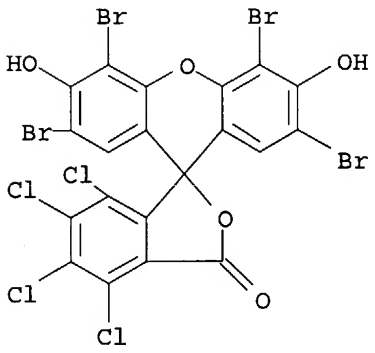
RN 31900-57-9 HCAPLUS
CN Silanediol, dimethyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 1066-42-8
CMF C2 H8 O2 Si



IT **18472-87-2**, Eosin Blue
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(phloxine B; colorimetric artificial nose with array of metalloporphyrin and **dye indicators** and method for artificial olfaction)
RN 18472-87-2 HCAPLUS
CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one, 2',4',5',7'-tetrabromo-4,5,6,7-tetrachloro-3',6'-dihydroxy-, disodium salt (9CI) (CA INDEX NAME)



●2 Na

L94 ANSWER 3 OF 19 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2003:590557 HCAPLUS
DN 139:127083
ED Entered STN: 01 Aug 2003
TI **Colorimetric** artificial nose having an array of **dyes** and method for artificial olfaction
IN Suslick, Kenneth S.; Rakow, Neal A.; Sen, Avijit; McNamara, William B.; Kosal, Margaret E.
PA Board of Trustees of the University of Illinois, USA
SO U.S. Pat. Appl. Publ., 47 pp., Cont.-in-part of U. S. Ser. No. 705,329.
CODEN: USXXCO
DT Patent
LA English
IC ICM G01N021-00
ICS G01N021-75
NCL 422055000; 436164000; 623010000
CC 80-2 (Organic Analytical Chemistry)
FAN.CNT 4

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2003143112	A1	20030731	US 2002-279788	20021024
	US 6368558	B1	20020409	US 2000-532125	20000321
	US 6495102	B1	20021217	US 2000-705329	20001103
PRAI	US 2000-532125	A2	20000321		
	US 2000-705329	A2	20001103		

AB The present invention involves an artificial nose having an array comprising at least a **1st dye** and a **2nd dye** in combination and having a distinct spectral response to an analyte. In one embodiment, the **1st** and **2nd dyes** are from the group comprising chemoresponsive **dyes**, and the **2nd dye** is distinct from the **1st dye.** In one embodiment, the **1st dye** is selected from the group consisting of porphyrin, chlorin, chlorophyll, phthalocyanine, and salen, or their metal complexes. In another embodiment, the **2nd dye** is selected from the group of **dyes** consisting of **acid-base indicator dyes** and solvatochromic **dyes.** The present invention is particularly useful in detecting metal ligating vapors. Further, the array of the present invention can be connected to a visual display device.

ST colorimetric artificial nose array **dye** olfaction

IT **Colorimetric indicators**
Colorimetry
Gas analysis
Gas sensors
Olfaction
Optical sensors
(colorimetric artificial nose with array of metalloporphyrin **indicators** and method for artificial olfaction)

IT Metalloporphyrins
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(colorimetric artificial nose with array of metalloporphyrin **indicators** and method for artificial olfaction)

IT **Fluoropolymers**, analysis
Polysiloxanes, analysis
RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST (Analytical study); USES (Uses)
(colorimetric artificial nose with array of metalloporphyrin **indicators** and method for artificial olfaction)

IT 64-17-5, Ethanol, analysis 67-64-1, Acetone, analysis 67-66-3, Chloroform, analysis 68-12-2, Dimethylformamide, analysis 71-43-2, Benzene, analysis 75-05-8, Acetonitrile, analysis 75-09-2, Methylene chloride, analysis 108-91-8, Cyclohexylamine, analysis 109-06-8, 2-Methylpyridine 109-73-9, n-Butylamine, analysis 109-99-9, Tetrahydrofuran, analysis 110-86-1, Pyridine, analysis 111-26-2, Hexylamine 111-31-9, 1-Hexanethiol 111-47-7, Dipropyl sulfide 111-86-4, n-Octylamine 121-45-9, Trimethyl phosphite 122-52-1, Triethyl phosphite 998-40-3, Tri-n-butylphosphine 1322-36-7, Dodecanethiol
RL: ANT (Analyte); ANST (Analytical study)
(colorimetric artificial nose with array of metalloporphyrin **indicators** and method for artificial olfaction)

IT 14074-80-7, 5,10,15,20-Tetraphenylporphyrinato zinc(II) 14172-90-8, 5,10,15,20-Tetraphenylporphyrinato cobalt(II) 14172-91-9, 5,10,15,20-Tetraphenylporphyrinato copper(II) 14641-64-6 29484-63-7, 5,10,15,20-Tetraphenylporphyrinato iron(III) 36965-71-6, 5,10,15,20-Tetrakis(pentafluorophenyl)porphyrinato iron (III) chloride 38414-01-6, 5,10,15,20-Tetraphenylporphyrinato cobalt(III) 59388-92-0, 5,10,15,20-Tetraphenylporphyrinato manganese(III) 63692-18-2, 5,10,15,20-Tetraphenylporphyrinato chromium(III) 67574-57-6, 5,10,15,20-Tetraphenylporphyrinato tin (IV) 79231-60-0, 5,10,15,20-Tetraphenylporphyrinato ruthenium(II) 185460-51-9, 5,10,15,20-Tetrakis(2',6'-dihydroxyphenyl)porphyrinatozinc(II) 316803-86-8, 5-Phenyl-10,15,20-tris(2',6'-dihydroxyphenyl)porphyrinatozinc (II) 316803-89-1, 5-(Phenyl)-10,15,20-trikis(2',6'-**disilanyloxyphenyl**)porphyrinatozinc(II) 316803-93-7, 5,10,15-Trikis(2,6-**disilanyloxyphenyl**)-20-(2-hydroxy-6-silyloxyphenyl)porphyrinatozinc(II) 316803-95-9, 5,10,15,20-

Tetrakis(2',6'-**disilanyloxyphenyl**)porphyrinatozinc(II)
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(colorimetric artificial nose with array of metalloporphyrin **indicators** and method for artificial olfaction)

IT 146997-20-8 361191-65-3
RL: ARG (Analytical reagent use); DEV (Device component use); ANST (Analytical study); USES (Uses)
(colorimetric artificial nose with array of metalloporphyrin **indicators** and method for artificial olfaction)

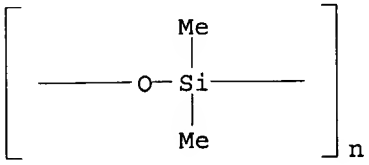
IT 84-69-5, Di-iso-butylphthalate 9002-84-0, Teflon 9003-53-6, Polystyrene **9016-00-6**, Di-Me **siloxane**, SRU **31900-57-9**, **Dimethylsilanediol homopolymer**
RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST (Analytical study); USES (Uses)
(colorimetric artificial nose with array of metalloporphyrin **indicators** and method for artificial olfaction)

IT 100-52-7, Benzaldehyde, reactions 109-97-7, Pyrrole 3392-97-0, 2,6-Dimethoxybenzaldehyde 18162-48-6, Chloro-tert-**butyldimethylsilane**
RL: RCT (Reactant); RACT (Reactant or reagent)
(colorimetric artificial nose with array of metalloporphyrin **indicators** and method for artificial olfaction)

IT 145363-07-1P, 5,10,15-Tris(2,6-dimethoxyphenyl)-20-phenyl-21H,23H-porphine
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(colorimetric artificial nose with array of metalloporphyrin **indicators** and method for artificial olfaction)

IT **9016-00-6**, Di-Me **siloxane**, SRU **31900-57-9**, **Dimethylsilanediol homopolymer**
RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST (Analytical study); USES (Uses)
(colorimetric artificial nose with array of metalloporphyrin **indicators** and method for artificial olfaction)

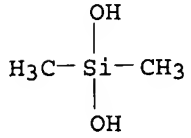
RN 9016-00-6 HCAPLUS
CN Poly[oxy(dimethylsilylene)] (8CI, 9CI) (CA INDEX NAME)



RN 31900-57-9 HCAPLUS
CN Silanediol, dimethyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 1066-42-8
CMF C2 H8 O2 Si



L94 ANSWER 4 OF 19 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2003:550133 HCAPLUS
DN 139:97604
ED Entered STN: 18 Jul 2003
TI **Sensor** for monitoring metabolic activity of an anaerobic or aerobic microorganism.
IN **Yeh, Ming-Hsuing**
PA **Becton, Dickinson and Company, USA**
SO Eur. Pat. Appl., 10 pp.
CODEN: EPXXDW
DT Patent
LA English
IC ICM G01N021-64
ICS G01N021-77
CC 9-1 (Biochemical Methods)
Section cross-reference(s): 10
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI EP 1327874	A2	20030716	EP 2003-370	20030110 <--
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
US 2003133123	A1	20030717	US 2002-41661	20020110 <--
JP 2003262628	A2	20030919	JP 2003-5019	20030110 <--
PRAI US 2002-41661	A	20020110 <--		

AB The present invention is directed to a **sensor** system for monitoring metabolic activity of an anaerobic or aerobic microorganism. The present invention further relates to a **sensor** system that can individually and simultaneously monitor **oxygen** and **carbon dioxide** levels of a **gas** composition Also provided is a **sensor** formulation for use with the **sensor** system of the present invention and a method of making the same.

ST **sensor** formulation detection **gas** compn
IT Microorganism
(aerobic; **sensor** for monitoring metabolic activity of an anaerobic or aerobic microorganism)
IT Microorganism
(anaerobic; **sensor** for monitoring metabolic activity of an anaerobic or aerobic microorganism)
IT **Acid-base indicators**
Catalysts
Chromophores
Coating process
Composition
Crosslinking agents
Density
Dyes
Fluorescent substances
Gas analysis
Metabolism, microbial
Mixing
Polymerization
Powders
Respiration, microbial
Sensors
Wavelength
(**sensor** for monitoring metabolic activity of an anaerobic or aerobic microorganism)
IT **Polymers**, uses
RL: DEV (Device component use); USES (Uses)
(**sensor** for monitoring metabolic activity of an anaerobic or aerobic microorganism)
IT **124-38-9**, **Carbon dioxide**, analysis
7782-44-7, **Oxygen**, analysis

RL: ANT (Analyte); ANST (Analytical study)
(**sensor** for monitoring metabolic activity of an anaerobic or aerobic microorganism)

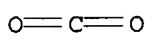
IT **76-59-5**, Bromthymol Blue **1733-12-6**, Cresol Red
21329-70-4 36536-22-8, 1,1',3,3,3',3'-Hexamethylindodicarbocyanine iodide
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(**sensor** for monitoring metabolic activity of an anaerobic or aerobic microorganism)

IT **7631-86-9**, **Silica**, analysis
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(**sensor** for monitoring metabolic activity of an anaerobic or aerobic microorganism)

IT **7440-06-4**, **Platinum**, uses
RL: CAT (Catalyst use); USES (Uses)
(**sensor** for monitoring metabolic activity of an anaerobic or aerobic microorganism)

IT **124-38-9**, **Carbon dioxide**, analysis
7782-44-7, **Oxygen**, analysis
RL: ANT (Analyte); ANST (Analytical study)
(**sensor** for monitoring metabolic activity of an anaerobic or aerobic microorganism)

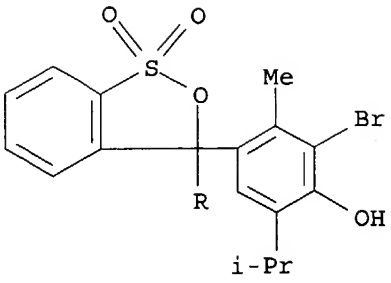
RN 124-38-9 HCAPLUS
CN Carbon dioxide (8CI, 9CI) (CA INDEX NAME)

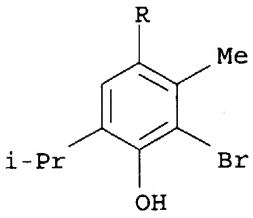


RN 7782-44-7 HCAPLUS
CN Oxygen (8CI, 9CI) (CA INDEX NAME)

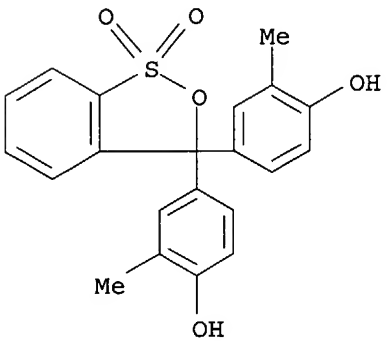
IT **76-59-5**, Bromthymol Blue **1733-12-6**, Cresol Red
21329-70-4 36536-22-8, 1,1',3,3,3',3'-Hexamethylindodicarbocyanine iodide
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(**sensor** for monitoring metabolic activity of an anaerobic or aerobic microorganism)

RN 76-59-5 HCAPLUS
CN Phenol, 4,4'-(1,1-dioxido-3H-2,1-benzoxathiol-3-ylidene)bis[2-bromo-3-methyl-6-(1-methylethyl)- (9CI) (CA INDEX NAME)

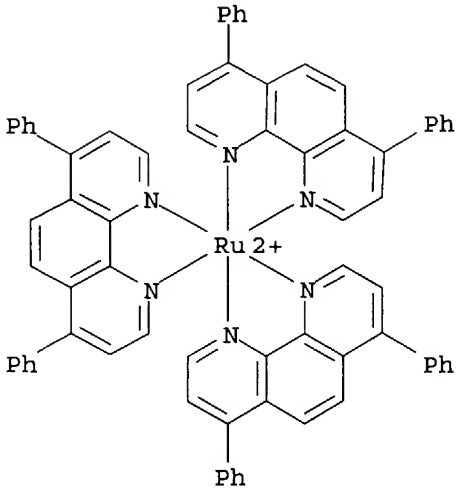




RN 1733-12-6 HCAPLUS
CN Phenol, 4,4'-(1,1-dioxido-3H-2,1-benzoxathiol-3-ylidene)bis[2-methyl-
(9CI) (CA INDEX NAME)



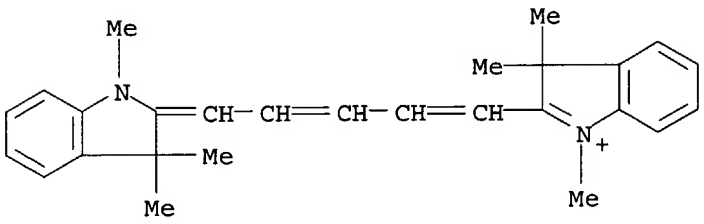
RN 21329-70-4 HCAPLUS
CN Ruthenium(2+), tris(4,7-diphenyl-1,10-phenanthroline-κN1,κN10)-
, dichloride, pentahydrate, (OC-6-11)- (9CI) (CA INDEX NAME)



● 5 H_2O

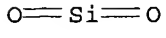
● 2 Cl^-

RN 36536-22-8 HCAPLUS
CN 3H-Indolium, 2-[5-(1,3-dihydro-1,3,3-trimethyl-2H-indol-2-ylidene)-1,3-pentadienyl]-1,3,3-trimethyl-, iodide (9CI) (CA INDEX NAME)



● I^-

IT **7631-86-9**, **Silica**, analysis
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(**sensor** for monitoring metabolic activity of an anaerobic or aerobic microorganism)
RN 7631-86-9 HCAPLUS
CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



IT **7440-06-4**, **Platinum**, uses
RL: CAT (Catalyst use); USES (Uses)
(**sensor** for monitoring metabolic activity of an anaerobic or aerobic microorganism)
RN 7440-06-4 HCAPLUS
CN Platinum (8CI, 9CI) (CA INDEX NAME)

Pt

L94 ANSWER 5 OF 19 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2002:960580 HCAPLUS
DN 138:18935
ED Entered STN: 19 Dec 2002
TI **Colorimetric** artificial nose having an array of **dyes** and method of artificial olfaction
IN Suslick, Kenneth S.; Rakow, Neal A.; Sen, Avijit
PA Board of Trustees of the University of Illinois, USA
SO U.S., 32 pp., Cont.-in-part of U.S. 6,368,558.
CODEN: USXXAM
DT Patent
LA English
IC ICM G01N021-00
NCL 422055000; 422068100; 422082050; 422083000; 422085000; 436164000; 436172000
CC 80-2 (Organic Analytical Chemistry)
FAN.CNT 4

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6495102	B1	20021217	US 2000-705329	20001103
	US 6368558	B1	20020409	US 2000-532125	20000321
	WO 2001071318	A1	20010927	WO 2001-US9092	20010321
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	EP 1274983	A1	20030115	EP 2001-920627	20010321
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
	US 2003129085	A1	20030710	US 2002-278421	20021023
	US 2003143112	A1	20030731	US 2002-279788	20021024
	US 2003166298	A1	20030904	US 2002-279701	20021024
PRAI	US 2000-532125	A2	20000321		
	US 2000-705329	A	20001103		
	WO 2001-US9092	W	20010321		

AB The present invention involves an artificial nose having an array comprising at least a **1st dye** and a **2nd dye** in combination and having a distinct spectral response to an analyte. In one embodiment, the **1st** and **2nd dyes** are from the group comprising porphyrin, chlorin, chlorophyll, phthalocyanine, or salen. In a further embodiment, the **1st** and **2nd dyes** are metalloporphyrins. The present invention is particularly useful in detecting metal ligating vapors. Further, the array of the present invention can be connected to a wavelength **sensitive** light detecting device.

ST colorimetric artificial nose array **dye** olfaction

IT **Colorimetric indicators**
Colorimetry
Gas analysis
Gas sensors
Olfaction
Optical sensors
(colorimetric artificial nose with array of metalloporphyrin **indicators** and method for artificial olfaction)

IT Metalloporphyrins
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(colorimetric artificial nose with array of metalloporphyrin **indicators** and method for artificial olfaction)

IT **Fluoropolymers**, analysis
Polysiloxanes, analysis
RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST (Analytical study); USES (Uses)
(colorimetric artificial nose with array of metalloporphyrin **indicators** and method for artificial olfaction)

IT 64-17-5, Ethanol, analysis 67-64-1, Acetone, analysis 67-66-3, Chloroform, analysis 68-12-2, Dimethylformamide, analysis 71-43-2, Benzene, analysis 75-05-8, Acetonitrile, analysis 75-09-2, Methylene chloride, analysis 108-91-8, Cyclohexylamine, analysis 109-06-8, 2-Methylpyridine 109-73-9, n-Butylamine, analysis 109-99-9, Tetrahydrofuran, analysis 110-86-1, Pyridine, analysis 111-26-2, Hexylamine 111-31-9, 1-Hexanethiol 111-47-7, Dipropyl sulfide 111-86-4, n-Octylamine 121-45-9, Trimethyl phosphite 122-52-1, Triethyl phosphite 998-40-3, Tri-n-butylphosphine 1322-36-7, Dodecanethiol
RL: ANT (Analyte); ANST (Analytical study)
(colorimetric artificial nose with array of metalloporphyrin **indicators** and method for artificial olfaction)

IT 14074-80-7, 5,10,15,20-Tetraphenylporphyrinato zinc(II) 14172-90-8, 5,10,15,20-Tetraphenylporphyrinato cobalt(II) 14172-91-9, 5,10,15,20-Tetraphenylporphyrinato copper(II) 14641-64-6 29484-63-7, 5,10,15,20-Tetraphenylporphyrinato iron(III) 36965-71-6, 5,10,15,20-Tetrakis(pentafluorophenyl)porphyrinato iron (III) chloride 38414-01-6, 5,10,15,20-Tetraphenylporphyrinato cobalt(III) 59388-92-0, 5,10,15,20-Tetraphenylporphyrinato manganese(III) 63692-18-2, 5,10,15,20-Tetraphenylporphyrinato chromium(III) 67574-57-6, 5,10,15,20-Tetraphenylporphyrinato tin (IV) 79231-60-0, 5,10,15,20-Tetraphenylporphyrinato ruthenium(II) 185460-51-9, 5,10,15,20-Tetrakis(2',6'-dihydroxyphenyl)porphyrinatozinc(II) 316803-86-8, 5-Phenyl-10,15,20-tris(2',6'-dihydroxyphenyl)porphyrinatozinc (II) 316803-89-1, 5-(Phenyl)-10,15,20-trikis(2',6'-**disilanyloxyphenyl**)porphyrinatozinc(II) 316803-93-7, 5,10,15-Trikis(2,6-**disilanyloxyphenyl**)-20-(2-hydroxy-6-silyloxyphenyl)porphyrinatozinc(II) 316803-95-9, 5,10,15,20-Tetrakis(2',6'-**disilanyloxyphenyl**)porphyrinatozinc(II)
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(colorimetric artificial nose with array of metalloporphyrin **indicators** and method for artificial olfaction)

IT 146997-20-8 361191-65-3
RL: ARG (Analytical reagent use); DEV (Device component use); ANST (Analytical study); USES (Uses)
(colorimetric artificial nose with array of metalloporphyrin **indicators** and method for artificial olfaction)

IT 84-69-5, Di-iso-butylphthalate 9002-84-0, Teflon 9003-53-6, Polystyrene **9016-00-6**, Di-Me **siloxane**, SRU **31900-57-9**, **Dimethylsilanediol homopolymer**
RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST (Analytical study); USES (Uses)
(colorimetric artificial nose with array of metalloporphyrin **indicators** and method for artificial olfaction)

IT 100-52-7, Benzaldehyde, reactions 109-97-7, Pyrrole 3392-97-0, 2,6-Dimethoxybenzaldehyde 18162-48-6, Chloro-tert-**butyldimethylsilane**
RL: RCT (Reactant); RACT (Reactant or reagent)
(colorimetric artificial nose with array of metalloporphyrin **indicators** and method for artificial olfaction)

IT 145363-07-1P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT

(Reactant or reagent)
(colorimetric artificial nose with array of metalloporphyrin **indicators** and method for artificial olfaction)

RE.CNT 63 THERE ARE 63 CITED REFERENCES AVAILABLE FOR THIS RECORD

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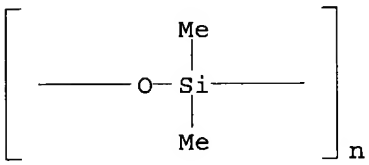
IT **9016-00-6**, Di-Me **siloxane**, SRU **31900-57-9**, **Dimethylsilanediol homopolymer**
RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST (Analytical study); USES (Uses)
(colorimetric artificial nose with array of metalloporphyrin **indicators** and method for artificial olfaction)

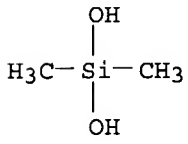
RN 9016-00-6 HCAPLUS
CN Poly[oxy(dimethylsilylene)] (8CI, 9CI) (CA INDEX NAME)



RN 31900-57-9 HCAPLUS
CN Silanediol, dimethyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 1066-42-8
CMF C2 H8 O2 Si



L94 ANSWER 6 OF 19 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2002:539937 HCAPLUS
DN 137:75520
ED Entered STN: 19 Jul 2002
TI Optical **sensors** and **sensor** arrays comprising **indicators** and reference substances
IN Klimant, Ingo; Leiner, Marco Jean Pierre
PA Presens Precision Sensing Gmbh, Germany
SO PCT Int. Appl., 28 pp.
CODEN: PIXXD2
DT Patent
LA German
IC ICM G01N033-58
CC 9-1 (Biochemical Methods)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002056023	A1	20020718	WO 2002-EP337	20020115 <--

W: JP, US
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL,

PT, SE, TR
DE 10101576 A1 20020912 DE 2001-10101576 20010115 <--
PRAI DE 2001-10101576 A 20010115 <--
AB The invention relates to an optical **sensor** for determining at least one parameter in a sample. The optical **sensor** comprises an **indicator** material responding to the parameter and having a short decay time and, a reference material not responding to the parameter and having a long decay time. The optical **sensor** detects the measuring signal **indicating** the parameter to be detected on the basis of the luminescence responses of the **indicator** and the reference material that are commonly detected. The **indicator** and the reference material are immobilized on a common support. The layer facing the sample of the **indicator** material and of the reference material is covered by a layer that allows contact between the **indicator** material and the sample but is substantially impermeable to the light used for exciting the **indicator** and the reference material. The layer prevents the sample from being influenced by the excitation light, thereby improving the measuring **sensitivity** of the **sensor.**
ST optical **sensor** array **indicator** ref material
IT Blood analysis
Body fluid
Culture media
Fluorescent dyes
Fluorescent indicators
Fluorometry
Immobilization, molecular or cellular
Optical sensors
Soot
Standard substances, analytical
Transparency
pH
(optical **sensors** and **sensor** arrays comprising **indicators** and reference substances)
IT **Polymers**, analysis
RL: ANT (Analyte); ANST (Analytical study)
(optical **sensors** and **sensor** arrays comprising **indicators** and reference substances)
IT Transition metal complexes
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(optical **sensors** and **sensor** arrays comprising **indicators** and reference substances)
IT **Fluoropolymers**, uses
RL: DEV (Device component use); USES (Uses)
(optical **sensors** and **sensor** arrays comprising **indicators** and reference substances)
IT Oxides (inorganic), uses
RL: DEV (Device component use); USES (Uses)
(optical **sensors** and **sensor** arrays comprising **indicators** and reference substances)
IT **Polysiloxanes, uses**
RL: DEV (Device component use); USES (Uses)
(optical **sensors** and **sensor** arrays comprising **indicators** and reference substances)
IT Polyurethanes, uses
RL: DEV (Device component use); USES (Uses)
(optical **sensors** and **sensor** arrays comprising **indicators** and reference substances)
IT 7439-88-5D, Iridium, complexes with α-diimine ligands 7440-04-2D, Osmium, complexes with α-diimine ligands **7440-06-4D**, **Platinum**, complexes with α-diimine ligands 7440-15-5D, Rhenium, complexes with α-diimine ligands 7440-16-6D, Rhodium, complexes with α-diimine ligands 7440-18-8D, Ruthenium, complexes with α-diimine ligands

RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(luminescence **dyes**; optical **sensors** and **sensor** arrays comprising **indicators** and reference substances)

IT **124-38-9**, **Carbon dioxide**, analysis
7439-93-2, Lithium, analysis 7439-95-4, Magnesium, analysis 7440-09-7, Potassium, analysis 7440-23-5, Sodium, analysis 7440-70-2, Calcium, analysis **7782-44-7**, **Oxygen**, analysis 16887-00-6, Chloride, analysis
RL: ANT (Analyte); ANST (Analytical study)
(optical **sensors** and **sensor** arrays comprising **indicators** and reference substances)

IT 9001-37-0, Glucose oxidase 9028-72-2, Lactate oxidase
RL: ARG (Analytical reagent use); DEV (Device component use); ANST (Analytical study); USES (Uses)
(optical **sensors** and **sensor** arrays comprising **indicators** and reference substances)

IT 1332-37-2, Iron oxide, uses 9002-84-0, Teflon 13463-67-7, Titanium dioxide, uses
RL: DEV (Device component use); USES (Uses)
(optical **sensors** and **sensor** arrays comprising **indicators** and reference substances)

RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Avl Medical Instr; EP 0907074 A 1999 HCAPLUS
(2) Bentsen, J; US 5462879 A 1995 HCAPLUS
(3) Groger, H; US 5577137 A 1996 HCAPLUS
(4) Klimant, I; DE 19829657 A 1999 HCAPLUS
(5) Leiner, M; US 5114676 A 1992 HCAPLUS
(6) Pease, J; US 5618732 A 1997 HCAPLUS

IT **7440-06-4D**, **Platinum**, complexes with α-diimine ligands
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(luminescence **dyes**; optical **sensors** and **sensor** arrays comprising **indicators** and reference substances)

RN 7440-06-4 HCAPLUS
CN Platinum (8CI, 9CI) (CA INDEX NAME)

Pt

IT **124-38-9**, **Carbon dioxide**, analysis
7782-44-7, **Oxygen**, analysis
RL: ANT (Analyte); ANST (Analytical study)
(optical **sensors** and **sensor** arrays comprising **indicators** and reference substances)

RN 124-38-9 HCAPLUS
CN Carbon dioxide (8CI, 9CI) (CA INDEX NAME)

O=C=O

RN 7782-44-7 HCAPLUS
CN Oxygen (8CI, 9CI) (CA INDEX NAME)

O=O

L94 ANSWER 7 OF 19 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2001:713656 HCAPLUS
DN 135:251129
ED Entered STN: 28 Sep 2001
TI **Colorimetric** artificial nose having an array of **dyes** and method for artificial olfaction
IN Suslick, Kenneth S.; Rakow, Neal A.; Sen, Avijit
PA Board of Trustees of the University of Illinois, USA
SO PCT Int. Appl., 53 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM G01N021-03
ICS G01N021-27; G01N021-29; G01N021-75
CC 80-2 (Organic Analytical Chemistry)
FAN.CNT 4

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001071318	A1	20010927	WO 2001-US9092	20010321
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	US 6368558	B1	20020409	US 2000-532125	20000321
	US 6495102	B1	20021217	US 2000-705329	20001103
	EP 1274983	A1	20030115	EP 2001-920627	20010321
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
	US 2003166298	A1	20030904	US 2002-279701	20021024
PRAI	US 2000-532125	A	20000321		
	US 2000-705329	A	20001103		
	WO 2001-US9092	W	20010321		

AB The present invention involves an artificial nose having an array comprising at least a **1st dye** and a **2nd dye** in combination and having a distinct spectral response to an analyte. In one embodiment, the **1st** and **2nd dyes** are from the group comprising porphyrin, chlorin, chlorophyll, phthalocyanine, or salen. In a further embodiment, the **1st** and **2nd dyes** are metalloporphyrins. The present invention is particularly useful in detecting metal ligating vapors. Further, the array of the present invention can be connected to a wavelength **sensitive** light detecting device.
ST colorimetric artificial nose array **dye** olfaction
IT **Colorimetric indicators**
Colorimetry
Gas analysis
Gas sensors
Olfaction
Optical sensors
(colorimetric artificial nose having array of metalloporphyrin **indicators** and method for artificial olfaction)
IT Metalloporphyrins
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(colorimetric artificial nose having array of metalloporphyrin **indicators** and method for artificial olfaction)
IT **Fluoropolymers**, analysis
Polysiloxanes, analysis
RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST

(Analytical study); USES (Uses)
(colorimetric artificial nose having array of metalloporphyrin **indicators** and method for artificial olfaction)

IT 64-17-5, Ethanol, analysis 67-64-1, Acetone, analysis 67-66-3, Chloroform, analysis 68-12-2, Dimethylformamide, analysis 71-43-2, Benzene, analysis 75-05-8, Acetonitrile, analysis 75-09-2, Methylene chloride, analysis 108-91-8, Cyclohexylamine, analysis 109-06-8, 2-Methylpyridine 109-73-9, n-Butylamine, analysis 109-99-9, Tetrahydrofuran, analysis 110-86-1, Pyridine, analysis 111-26-2, Hexylamine 111-31-9, 1-Hexanethiol 111-47-7, Dipropyl sulfide 111-86-4, n-Octylamine 121-45-9, Trimethyl phosphite 122-52-1, Triethyl phosphite 998-40-3, Tri-n-butylphosphine 1322-36-7, Dodecanethiol
RL: ANT (Analyte); ANST (Analytical study)
(colorimetric artificial nose having array of metalloporphyrin **indicators** and method for artificial olfaction)

IT 14074-80-7, 5,10,15,20-Tetraphenylporphyrinato zinc(II) 14172-90-8, 5,10,15,20-Tetraphenylporphyrinato cobalt(II) 14172-91-9, 5,10,15,20-Tetraphenylporphyrinato copper(II) 14641-64-6 29484-63-7, 5,10,15,20-Tetraphenylporphyrinato iron(III) 36965-71-6, 5,10,15,20-Tetrakis(pentafluorophenyl)porphyrinato iron (III) chloride 38414-01-6, 5,10,15,20-Tetraphenylporphyrinato cobalt(III) 59388-92-0, 5,10,15,20-Tetraphenylporphyrinato manganese(III) 63692-18-2, 5,10,15,20-Tetraphenylporphyrinato chromium(III) 67574-57-6, 5,10,15,20-Tetraphenylporphyrinato tin (IV) 79231-60-0, 5,10,15,20-Tetraphenylporphyrinato ruthenium(II) 185460-51-9, 5,10,15,20-Tetrakis(2',6'-dihydroxyphenyl)porphyrinatozinc(II) 316803-86-8, 5-Phenyl-10,15,20-tris(2',6'-dihydroxyphenyl)porphyrinatozinc (II) 316803-89-1, 5-(Phenyl)-10,15,20-trikis(2',6'-**disilanyloxyphenyl**)porphyrinatozinc(II) 316803-93-7, 5,10,15-Trikis(2,6-**disilanyloxyphenyl**)-20-(2-hydroxy-6-silyloxyphenyl)porphyrinatozinc(II) 316803-95-9, 5,10,15,20-Tetrakis(2',6'-**disilanyloxyphenyl**)porphyrinatozinc(II)
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(colorimetric artificial nose having array of metalloporphyrin **indicators** and method for artificial olfaction)

IT 146997-20-8 361191-65-3
RL: ARG (Analytical reagent use); DEV (Device component use); ANST (Analytical study); USES (Uses)
(colorimetric artificial nose having array of metalloporphyrin **indicators** and method for artificial olfaction)

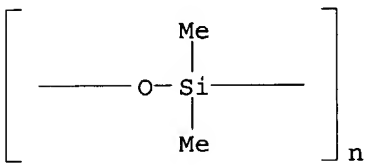
IT 84-69-5, Di-iso-butylphthalate 9002-84-0, Teflon 9003-53-6, Polystyrene **9016-00-6**, di-Me **siloxane**, SRU **31900-57-9**, **Dimethylsilanediol homopolymer**
RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST (Analytical study); USES (Uses)
(colorimetric artificial nose having array of metalloporphyrin **indicators** and method for artificial olfaction)

IT 100-52-7, Benzaldehyde, reactions 109-97-7, Pyrrole 3392-97-0, 2,6-Dimethoxybenzaldehyde 18162-48-6, Chloro-tert-**butyldimethylsilane**
RL: RCT (Reactant); RACT (Reactant or reagent)
(colorimetric artificial nose having array of metalloporphyrin **indicators** and method for artificial olfaction)

IT 145363-07-1P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(colorimetric artificial nose having array of metalloporphyrin **indicators** and method for artificial olfaction)

RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Ackley; US 5489988 A 1996 HCAPLUS
(2) Bard; US 6140138 A 2000 HCAPLUS

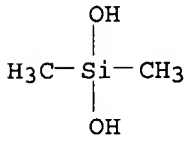
(3) Neuschafer; US 6078705 A 2000 HCAPLUS
(4) Silver; US 5733506 A 1998 HCAPLUS
(5) Therien; US 5955603 A 1999 HCAPLUS
(6) Walt; US 5512490 A 1996 HCAPLUS
(7) Zhang; US 5786219 A 1998 HCAPLUS
IT **9016-00-6**, di-Me **siloxane**, SRU **31900-57-9**, **Dimethylsilanediol homopolymer**
RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST (Analytical study); USES (Uses)
(colorimetric artificial nose having array of metalloporphyrin **indicators** and method for artificial olfaction)
RN 9016-00-6 HCAPLUS
CN Poly[oxy(dimethylsilylene)] (8CI, 9CI) (CA INDEX NAME)



RN 31900-57-9 HCAPLUS
CN Silanediol, dimethyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 1066-42-8
CMF C2 H8 O2 Si



L94 ANSWER 8 OF 19 HCAPLUS COPYRIGHT 2004 ACS on STN
AN **1999:779238** HCAPLUS
DN **132:20746**
ED Entered STN: 09 Dec 1999
TI **Sensor** composition for the detection of microorganisms in a sample via respiratory **oxygen**
IN Gentle, Thomas M., Jr.; **Yeh, Ming-Hsiung**
PA **Becton, Dickinson and Company, USA**
SO U.S., 6 pp.
CODEN: USXXAM
DT Patent
LA English
IC ICM C08K005-34
NCL 524092000
CC 9-1 (Biochemical Methods)
Section cross-reference(s): 10
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5998517	A	19991207	US 1998-92689	19980605
	EP 962535	A1	19991208	EP 1999-109191	19990510
	EP 962535	B1	20030827		

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,

IE, SI, LT, LV, FI, RO
CA 2272043 AA 19991205 CA 1999-2272043 19990513
JP 2000004898 A2 20000111 JP 1999-160156 19990607
PRAI US 1998-92689 A 19980605
AB The present invention relates to a composition for the detection of the growth of respiring microorganisms in a sample, which comprises: (a) tris(4,7-diphenyl-10-phenanthroline)ruthenium dichloride pentahydrate(sic); (b) a hydroxyl functional group; (c) an organosilicon **polymer**; (d) an organohydrogensilicon compound; and (e) a **catalyst**; and a method for preparing said composition
ST **oxygen sensor** homogeneous microorganism clin analysis
IT Microbiology
(clin.; **sensor** composition for detection of microorganisms in a sample via respiratory **oxygen**)
IT **Gas sensors**
(**oxygen**; **sensor** composition for detection of microorganisms in a sample via respiratory **oxygen**)
IT **Catalysts**
Crosslinking agents
Fluorometry
Microorganism
Polymerization
(**sensor** composition for detection of microorganisms in a sample via respiratory **oxygen**)
IT **Polysiloxanes**, uses
RL: DEV (Device component use); USES (Uses)
(**sensor** composition for detection of microorganisms in a sample via respiratory **oxygen**)
IT 7440-21-3D, Silicon, derivative, uses
RL: DEV (Device component use); USES (Uses)
(SF201 and SF205; **sensor** composition for detection of microorganisms in a sample via respiratory **oxygen**)
IT **7782-44-7**, **Oxygen**, analysis
RL: ANT (Analyte); BOC (Biological occurrence); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); OCCU (Occurrence)
(**sensor** composition for detection of microorganisms in a sample via respiratory **oxygen**)
IT 21329-70-4
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(**sensor** composition for detection of microorganisms in a sample via respiratory **oxygen**)
IT 64-17-5, Ethanol, analysis 112-43-6, 10-Undecenyl alcohol 765-12-8, 3,6,9,12-Tetraoxatetradeca-1,13-diene 1343-98-2D, Silicic acid, organosilyl derivs.
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(**sensor** composition for detection of microorganisms in a sample via respiratory **oxygen**)
IT 13463-67-7, Titanium dioxide, analysis 70331-94-1, Benzenepropanoic acid, 3,5-bis(1,1-dimethylethyl)-4-hydroxy-, (1,2-dioxo-1,2-ethanediyl)bis(imino-2,1-ethanediyl) ester
RL: ARU (Analytical role, unclassified); MOA (Modifier or additive use); ANST (Analytical study); USES (Uses)
(**sensor** composition for detection of microorganisms in a sample via respiratory **oxygen**)
IT 7440-06-4, **Platinum**, uses
RL: CAT (Catalyst use); USES (Uses)
(**sensor** composition for detection of microorganisms in a sample via respiratory **oxygen**)
RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Baardman; US 5670611 1997 HCAPLUS
(2) Johnson; US 4022751 1977 HCAPLUS

(3) Williams; US 4396734 1983 HCAPLUS
IT **7782-44-7**, **Oxygen**, analysis
RL: ANT (Analyte); BOC (Biological occurrence); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); OCCU (Occurrence)
(**sensor** composition for detection of microorganisms in a sample via respiratory **oxygen**)
RN 7782-44-7 HCAPLUS
CN Oxygen (8CI, 9CI) (CA INDEX NAME)

O=O

L94 ANSWER 9 OF 19 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1999:487458 HCAPLUS
DN 131:124682
ED Entered STN: 06 Aug 1999
TI Optical **sensors** with reflective materials and methods for producing such optical **sensors**
IN Barnard, Steven M.; Collins, Thomas C.; Mason, Richard W.; Slovacek, Rudolf E.; Cudmore, Susan L.; Munkholm, Christiane; Sullivan, Kevin J.
PA Bayer Corporation, USA
SO PCT Int. Appl., 49 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM G01N021-64
CC 79-2 (Inorganic Analytical Chemistry)
Section cross-reference(s): 9
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
PI	WO 9937997	A1	19990729	WO 1999-IB47	19990118	<--
	W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM					
	RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG					
	US 6254831	B1	20010703	US 1998-9917	19980121	<--
	CA 2318948	AA	19990729	CA 1999-2318948	19990118	<--
	AU 9917779	A1	19990809	AU 1999-17779	19990118	<--
	EP 1051607	A1	20001115	EP 1999-900082	19990118	<--
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI					
	JP 2002501191	T2	20020115	JP 2000-528856	19990118	<--
	US 2001012539	A1	20010809	US 2001-823734	20010330	<--
PRAI	US 1998-9917	A1	19980121	<--		
	WO 1999-IB47	W	19990118	<--		

AB Provided is an optical **sensor** including a support and a detection layer, wherein the detection layer includes: (a) a luminescent material wherein the luminescence intensity of the luminescent material varies as the amount of an analyte varies; (b) a reflective material having a highly efficient reflectance of the wavelengths of excitation and of emission of the luminescent material; and (c) a **polymeric** binder to support and hold together the luminescent material and the reflective material. Such an optical **sensor** can be advantageously used in the detection of **gaseous**, ionic, and nonionic analytes in highly

scattering samples. Also provided are methods for the manufacture of such optical **sensors.**

ST optical **sensor** reflective layer

IT Polyamides, analysis
RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST (Analytical study); USES (Uses)
(acrylic; fabrication and applications of optical **sensors** with reflective materials)

IT Acrylic **polymers**, analysis
Polyamides, analysis
Polycarbonates, analysis
Polyesters, analysis
Polyimides, analysis
Polyolefins
Polysiloxanes, analysis
Polyurethanes, analysis
RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST (Analytical study); USES (Uses)
(binder; fabrication and applications of optical **sensors** with reflective materials)

IT Blood analysis
(blood anal. by optical **sensors** with reflective materials)

IT Binders
Fluorescent substances
Luminescence
Luminescent substances
Optical reflectors
Optical sensors
Pigments, nonbiological
Plastic films
Polymer-supported reagents
(fabrication and applications of optical **sensors** with reflective materials)

IT Aminoplasts
Polyesters, analysis
RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST (Analytical study); USES (Uses)
(fabrication and applications of optical **sensors** with reflective materials)

IT **Gas analysis**
Optical gas sensors
(**gas** analyte determination by optical **gas sensor** with reflective materials)

IT Acrylic **polymers**, analysis
RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST (Analytical study); USES (Uses)
(polyamide-; fabrication and applications of optical **sensors** with reflective materials)

IT Alkadienes
Nitriles, analysis
RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST (Analytical study); USES (Uses)
(**polymers**, binder; fabrication and applications of optical **sensors** with reflective materials)

IT 9002-86-2D, Polyvinyl chloride, derivs. 9002-89-5D, Polyvinyl alcohol, derivs. 9004-57-3, Ethyl cellulose 129219-08-5, N,N-Dimethylacrylamide-N-tert-butylacrylamide **copolymer**
RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST (Analytical study); USES (Uses)
(binder; fabrication and applications of optical **sensors** with reflective materials)

IT 31248-39-2, **Platinum** octaethyl porphyrin
RL: ARG (Analytical reagent use); DEV (Device component use); ANST

(Analytical study); USES (Uses)
(fabrication and applications of optical **sensors** with reflective materials)

IT 1309-48-4, Magnesium oxide (MgO), analysis 1309-64-4, Antimony oxide (Sb2O3), analysis 1314-13-2, Zinc oxide (ZnO), analysis 7727-43-7, Barium sulfate (BaSO4) 9003-53-6D, Polystyrene, derivs. 9011-05-6 13463-67-7, Titanium oxide (TiO2), analysis 25038-59-9, analysis 26519-58-4, Ethylhexylmethacrylate-methylmethacrylate **copolymer**
RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST (Analytical study); USES (Uses)
(fabrication and applications of optical **sensors** with reflective materials)

IT 2052-49-5, Tetrabutylammonium hydroxide 112803-18-6, Hydroxypyrenetrisulfonic acid
RL: NUU (Other use, unclassified); USES (Uses)
(fabrication and applications of optical **sensors** with reflective materials)

IT **124-38-9**, **Carbon dioxide**, analysis 7664-41-7, Ammonia, analysis **7782-44-7**, **Oxygen**, analysis
RL: ANT (Analyte); ANST (Analytical study)
(**gas** analyte determination by optical **gas sensor** with reflective materials)

RE.CNT 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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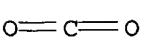
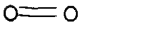
IT **124-38-9**, **Carbon dioxide**, analysis **7782-44-7**, **Oxygen**, analysis
RL: ANT (Analyte); ANST (Analytical study)
(**gas** analyte determination by optical **gas sensor** with reflective materials)

RN 124-38-9 HCAPLUS
CN Carbon dioxide (8CI, 9CI) (CA INDEX NAME)



RN 7782-44-7 HCAPLUS
CN Oxygen (8CI, 9CI) (CA INDEX NAME)



L94 ANSWER 10 OF 19 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1999:342393 HCAPLUS
DN 131:94576
ED Entered STN: 04 Jun 1999
TI Development of **fluorescent** fiber-optic single **polymer** membrane **sensors** for simultaneous ratiometric detection of **oxygen** and **carbon dioxide** in biological systems
AU Dourado, Sunil; Kopelman, Raoul

CS Department of Chemistry, University of Michigan, Ann Arbor, MI, 48109-2083, USA
SO Proceedings of SPIE-The International Society for Optical Engineering (**1999**), 3540(Chemical, Biochemical, and Environmental Fiber Sensors X), 224-234
CODEN: PSISDG; ISSN: 0277-786X
PB SPIE-The International Society for Optical Engineering
DT Journal
LA English
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 79, 80
AB **O**- and **CO2**- **sensitive fluorescent** **indicators** are incorporated into a **polymeric** membrane for their detection by ratiometric **fluorescence** measurements. **O** is measured by **fluorescence** quenching of Ru, and **Pt dyes.** **CO2** is monitored by tracking the change in the **fluorescence** emission spectrum of a pH **indicator dye** as the **gas** diffuses through the **polymer** membrane and interacts with the **dye.** The detection principle is the pH change induced in the membrane due to the influx of **CO2.** The **indicator dye** studied is HPTS. The **polymer** membranes are made of silicone or polystyrene.
ST **fluorescent** fiber membrane **sensor oxygen** **carbon dioxide** biol
IT **Fluorescence**
Fluorescence quenching
Membranes, nonbiological
Optical fibers
Optical sensors
(development of **fluorescent** fiber-optic single **polymer** membrane **sensors** for simultaneous ratiometric detection of **oxygen** and **carbon dioxide** in biol. systems)
IT **Polysiloxanes, uses**
RL: DEV (Device component use); USES (Uses)
(development of **fluorescent** fiber-optic single **polymer** membrane **sensors** for simultaneous ratiometric detection of **oxygen** and **carbon dioxide** in biol. systems)
IT **124-38-9**, **Carbon dioxide**, analysis
17778-80-2, **Oxygen** atom, analysis
RL: ANT (Analyte); ANST (Analytical study)
(development of **fluorescent** fiber-optic single **polymer** membrane **sensors** for simultaneous ratiometric detection of **oxygen** and **carbon dioxide** in biol. systems)
IT 3084-69-3D, tridodecylmethylammonium salt 9003-53-6, Polystyrene 9011-14-7, PMMA **36309-88-3** 45313-91-5D, salt with 8-hydroxypyrene-1,3,6-trisulfonate trisodium 52064-56-9
RL: DEV (Device component use); USES (Uses)
(development of **fluorescent** fiber-optic single **polymer** membrane **sensors** for simultaneous ratiometric detection of **oxygen** and **carbon dioxide** in biol. systems)
RE.CNT 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
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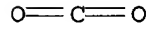
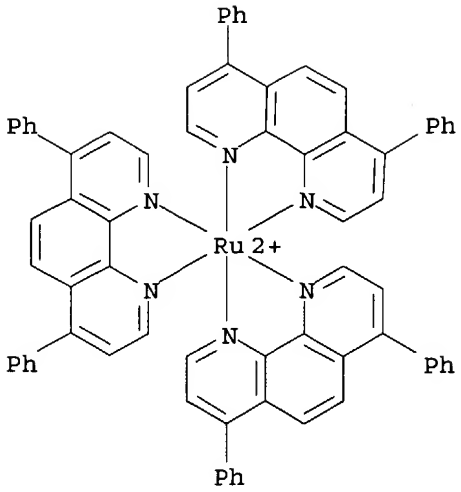
(27) Weigl, B; Analytica Chimica Acta 1995, V302, P249 HCAPLUS
(28) Weigl, B; Journal of biotechnology 1994, V32, P127 HCAPLUS
(29) Wolfbeis, O; Analytical Chemistry 1988, V60, P2028 HCAPLUS
(30) Xu, W; Analytical Chemistry 1994, V66, P4133 HCAPLUS

IT **124-38-9**, **Carbon dioxide**, analysis
RL: ANT (Analyte); ANST (Analytical study)
(development of **fluorescent** fiber-optic single **polymer** membrane **sensors** for simultaneous ratiometric detection of **oxygen** and **carbon dioxide** in biol. systems)
RN 124-38-9 HCAPLUS
CN Carbon dioxide (8CI, 9CI) (CA INDEX NAME)



IT **36309-88-3**
RL: DEV (Device component use); USES (Uses)
(development of **fluorescent** fiber-optic single **polymer** membrane **sensors** for simultaneous ratiometric detection of **oxygen** and **carbon dioxide** in biol. systems)
RN 36309-88-3 HCAPLUS
CN Ruthenium(2+), tris(4,7-diphenyl-1,10-phenanthroline-κN1,κN10)-, dichloride, (OC-6-11)- (9CI) (CA INDEX NAME)



●2 Cl^-

L94 ANSWER 11 OF 19 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1998:91278 HCAPLUS
DN 128:187935
ED Entered STN: 18 Feb 1998
TI Development of luminescence-based **oxygen sensor**
AU Zhang, Minquan; Chen, Huanqin; Huang, Guoxian
CS Institute of Chemical Engineering, South China University of Science and Technology, Canton, 510641, Peop. Rep. China
SO Fenxi Shiyanshi (**1997**), 16(6), 10-14
CODEN: FENSE4; ISSN: 1000-0720
PB Beijing Daxue Chubanshe
DT Journal
LA Chinese
CC 79-2 (Inorganic Analytical Chemistry)
Section cross-reference(s): 73
AB An **O sensor** based on **fluorescence** quenching of Ru complex was developed. A novel method for the preparation of an **O sensing** film was proposed. The **sensing** material [Ru(ph2phen)3](ClO4)2 was adsorbed on the surface of amorphous **SiO2** particles and then immobilized on a silicone rubber film. The **sensing** element was designed without direct contact with samples. The **sensor** has high **sensitivity**, rapid response, good stability, and high efficiency.
ST **oxygen sensor fluorescence** quenching
IT Mud
(Active; development of luminescence-based **oxygen sensor**)
IT **Fluorescence** quenching
Gas analysis
Optical gas sensors
Optical gas sensors
(development of luminescence-based **oxygen sensor**)
IT **Polysiloxanes, uses**
RL: DEV (Device component use); USES (Uses)
(development of luminescence-based **oxygen sensor**)
IT **7782-44-7, Oxygen**, analysis
RL: ANT (Analyte); ANST (Analytical study)

(development of luminescence-based **oxygen sensor**)

IT **75213-31-9**
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(development of luminescence-based **oxygen sensor**)

IT 7440-02-0, Nickel, analysis 7440-47-3, Chromium, analysis
RL: ARU (Analytical role, unclassified); PRP (Properties); ANST (Analytical study)
(development of luminescence-based **oxygen sensor**)

IT **7631-86-9**, **Silica**, uses
RL: DEV (Device component use); USES (Uses)
(development of luminescence-based **oxygen sensor**)

IT **7782-44-7**, **Oxygen**, analysis
RL: ANT (Analyte); ANST (Analytical study)
(development of luminescence-based **oxygen sensor**)

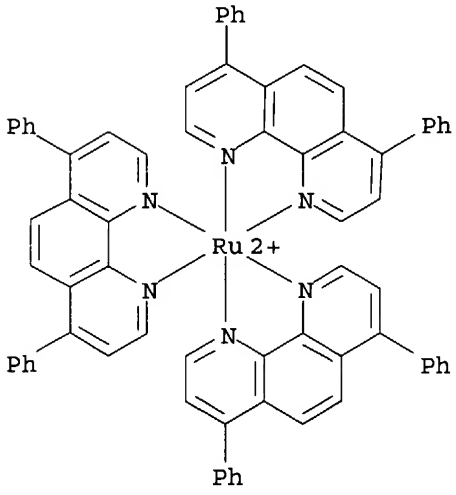
RN 7782-44-7 HCAPLUS
CN Oxygen (8CI, 9CI) (CA INDEX NAME)

IT **75213-31-9**
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(development of luminescence-based **oxygen sensor**)

RN 75213-31-9 HCAPLUS
CN Ruthenium(2+), tris(4,7-diphenyl-1,10-phenanthroline-κN1,κN10)-, (OC-6-11)-, diperchlorate (9CI) (CA INDEX NAME)

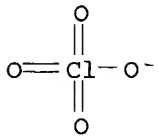
CM 1

CRN 63373-04-6
CMF C72 H48 N6 Ru
CCI CCS

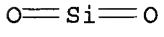


CM 2

CRN 14797-73-0
CMF Cl O4



IT **7631-86-9**, **Silica**, uses
RL: DEV (Device component use); USES (Uses)
(development of luminescence-based **oxygen sensor**)
RN 7631-86-9 HCAPLUS
CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L94 ANSWER 12 OF 19 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1997:262508 HCAPLUS
DN 126:329666
ED Entered STN: 24 Apr 1997
TI Simultaneous monitoring of pH, **CO2** and **O2** using an optical imaging fiber
AU Ferguson, Jane A.; Healey, Brian G.; Bronk, Karen S.; Barnard, Steven M.; Walt, David R.
CS Dep. Chem., Tufts Univ., Medford, MA, 02155, USA
SO Analytica Chimica Acta (**1997**), 340(1-3), 123-131
CODEN: ACACAM; ISSN: 0003-2670
PB Elsevier
DT Journal
LA English
CC 17-1 (Food and Feed Chemistry)
Section cross-reference(s): 9, 16, 73
AB The interdependence of pH, **CO2**, and **O2** during chemical and biochem. processes has driven the need to monitor them simultaneously, continuously, and in situ, to exert better control over such reactions. We present the fabrication and performance of a multi-analyte imaging fiber **sensor** that allows pH, **CO2**, and **O2** to be monitored simultaneously with rapid response. **Sensing** elements are fabricated by covalently immobilizing **fluorescent indicators** within **polymer matrixes** via **photopolymn.**, resulting in the formation of distinct regions of analyte-**sensitive polymer** at the fiber's distal end. The multianalyte **sensor**'s working range is 0-100% for **O2** and 0-10% for **CO2** in the pH range 5.5-7.5. The **sensor** was used to monitor the pH, **CO2**, and **O2** changes during beer fermentation
ST fiber optic **sensor** multianalyte beer fermn; **carbon dioxide** detn **sensor** beer fermn; **oxygen** detn **sensor** beer fermn; pH detn **sensor** beer fermn
IT Beer
(fermentation; pH and **CO2** and **O2** simultaneous monitoring with fiber optic **sensor**)
IT Beer analysis
Charge coupled devices
Electrodes
Fermentation
Fiber optic sensors
Fluorescence quenching
Optical fibers
Worts

pH
(pH and **CO2** and **O2** simultaneous monitoring with
fiber optic **sensor**)
IT **Polysiloxanes, analysis**
RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST (Analytical study); USES (Uses)
(pH and **CO2** and **O2** simultaneous monitoring with
fiber optic **sensor**)
IT **124-38-9, Carbon dioxide**, analysis
7782-44-7, Oxygen, analysis
RL: ANT (Analyte); ANST (Analytical study)
(pH and **CO2** and **O2** simultaneous monitoring with
fiber optic **sensor**)
IT **63373-04-6**
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(pH and **CO2** and **O2** simultaneous monitoring with
fiber optic **sensor**)
IT 53413-37-9P
RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)
(pH and **CO2** and **O2** simultaneous monitoring with
fiber optic **sensor**)
IT 33410-59-2, PolyHEMA
RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST (Analytical study); USES (Uses)
(pH and **CO2** and **O2** simultaneous monitoring with
fiber optic **sensor**)
IT 814-68-6, Acryloyl chloride 3326-34-9
RL: RCT (Reactant); RACT (Reactant or reagent)
(pH and **CO2** and **O2** simultaneous monitoring with
fiber optic **sensor**)
RE.CNT 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
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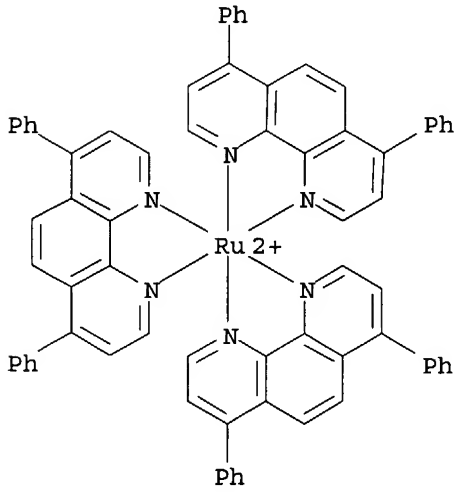
(28) Xu, W; Anal Chem 1994, V66, P4133 HCAPLUS
IT **124-38-9, Carbon dioxide**, analysis
7782-44-7, Oxygen, analysis

RL: ANT (Analyte); ANST (Analytical study)
(pH and **CO2** and **O2** simultaneous monitoring with
fiber optic **sensor**)
RN 124-38-9 HCAPLUS
CN Carbon dioxide (8CI, 9CI) (CA INDEX NAME)

RN 7782-44-7 HCAPLUS
CN Oxygen (8CI, 9CI) (CA INDEX NAME)

IT **63373-04-6**
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(pH and **CO2** and **O2** simultaneous monitoring with
fiber optic **sensor**)
RN 63373-04-6 HCAPLUS
CN Ruthenium(2+), tris(4,7-diphenyl-1,10-phenanthroline-κN1,κN10)-
, (OC-6-11)- (9CI) (CA INDEX NAME)



L94 ANSWER 13 OF 19 HCAPLUS COPYRIGHT 2004 ACS on STN
AN **1995:950069** HCAPLUS
DN **124:104813**
ED Entered STN: 29 Nov 1995
TI Selection of silicone **polymer matrix** for optical
gas sensing
AU He, Huarui; Fraatz, Robert J.; Leiner, Marc J. P.; Rehn, Margit M.; Tusa,
James K.
CS AVL BioSense Corporation, 33 Mansell Court, Roswell, GA, 30076, USA
SO Sensors and Actuators, B: Chemical (1995), B29(1-3), 246-50
CODEN: SABCEB; ISSN: 0925-4005
PB Elsevier
DT Journal
LA English
CC 79-2 (Inorganic Analytical Chemistry)
Section cross-reference(s): 38
AB The **oxygen** quenching behavior of a transition metal complex of

ruthenium, adsorbed on **silica** gel carrier beads entrapped in various types of silicone **polymers**, is studied. The dependence of storage conditions and time on the calibration parameters is measured. Results are presented for two silicone cure systems: **silanol-silanol** condensation and vinyl-hydride addition systems.

ST silicone **polymer** optical **gas sensor**

IT **Gas analysis**
(selection of silicone **polymer matrix** for optical **gas sensing**)

IT **Silica** gel, analysis
Siloxanes and Silicones, analysis
RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST (Analytical study); USES (Uses)
(selection of silicone **polymer matrix** for optical **gas sensing**)

IT **Sensors**
(**gas**, **optical**, selection of silicone **polymer matrix** for **optical gas sensing**)

IT **Siloxanes and Silicones, analysis**
RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST (Analytical study); USES (Uses)
(vinyl, selection of silicone **polymer matrix** for optical **gas sensing**)

IT 17689-77-9, **Ethyltriacetoxysilane**
RL: RCT (Reactant); RACT (Reactant or reagent)
(**crosslinker**; selection of silicone **polymer matrix** for optical **gas sensing**)

IT 81032-58-8
RL: CAT (Catalyst use); USES (Uses)
(**crosslinking catalyst**; selection of silicone **polymer matrix** for optical **gas sensing**)

IT 14323-06-9 23570-43-6, Tris(1,10-phenanthroline)ruthenium(II) dichloride
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(**indicator**; selection of silicone **polymer matrix** for optical **gas sensing**)

IT **7782-44-7**, **Oxygen**, analysis
RL: ANT (Analyte); ANST (Analytical study)
(**oxygen** determination by optical **gas sensor** with silicone **polymer**)

IT **9016-00-6D**, Di-Me **siloxane**, SRU, trimethylsilyl-terminated and vinyl-terminated and **silanol**-terminated derivs.
31900-57-9D, **Dimethylsilanediol homopolymer**, trimethylsilyl-terminated and vinyl-terminated and **silanol**-terminated derivs.
RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST (Analytical study); USES (Uses)
(selection of silicone **polymer matrix** for optical **gas sensing**)

IT 77-58-7, Dibutyltin dilaurate
RL: CAT (Catalyst use); USES (Uses)
(selection of silicone **polymer matrix** for optical **gas sensing**)

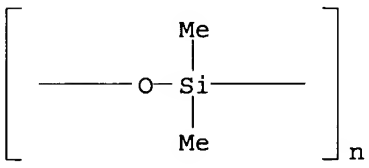
IT **7782-44-7**, **Oxygen**, analysis
RL: ANT (Analyte); ANST (Analytical study)
(**oxygen** determination by optical **gas sensor** with silicone **polymer**)

RN 7782-44-7 HCAPLUS

CN Oxygen (8CI, 9CI) (CA INDEX NAME)

O═O

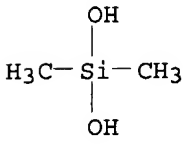
IT **9016-00-6D**, Di-Me **siloxane**, SRU, trimethylsilyl-terminated and vinyl-terminated and **silanol**-terminated derivs.
31900-57-9D, **Dimethylsilanediol homopolymer**, trimethylsilyl-terminated and vinyl-terminated and **silanol**-terminated derivs.
RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST (Analytical study); USES (Uses)
(selection of silicone **polymer matrix** for optical **gas sensing**)
RN 9016-00-6 HCAPLUS
CN Poly[oxy(dimethylsilylene)] (8CI, 9CI) (CA INDEX NAME)



RN 31900-57-9 HCAPLUS
CN Silanediol, dimethyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 1066-42-8
CMF C2 H8 O2 Si



L94 ANSWER 14 OF 19 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1995:842744 HCAPLUS
DN 123:245637
ED Entered STN: 10 Oct 1995
TI Solid state **sensors**
IN Jovanovic, Misa V.; Markle, David Reed
PA Biomedical Sensors, Ltd., UK
SO PCT Int. Appl., 22 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM G01N031-22
ICS G01N021-77; C08G077-04
ICA A61B005-00
CC 79-2 (Inorganic Analytical Chemistry)
Section cross-reference(s): 9
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 9522759	A1	19950824	WO 1995-IB36	19950118 <--
W: AU, CA, DE, JP, KR, MX				

RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE
CA 2183455 AA 19950824 CA 1995-2183455 19950118 <--
AU 9513909 A1 19950904 AU 1995-13909 19950118 <--
EP 745220 A1 19961204 EP 1995-905214 19950118 <--
EP 745220 B1 20000412
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, NL, PT, SE
JP 09502528 T2 19970311 JP 1995-521687 19950118 <--
JP 2821026 B2 19981105
AT 191790 E 20000415 AT 1995-905214 19950118 <--
ZA 9501219 A 19960815 ZA 1995-1219 19950215 <--
PRAI US 1994-197423 A 19940216 <--
WO 1995-IB36 W 19950118 <--

AB A stabilized bio-inert **sensor** for the determination of an analyte, especially pO2, pCO2 and pH, in a medium which comprises a chemical **indicator sensitive** to the analyte in association with a stabilizing substrate formed from a **polymer** which is inert to the medium and analyte and does not affect the **sensitivity** of the **indicator**, which **polymer** is a **cross-linked**, solid silicone rubber formed from a silicone carbinol having a mol. structure compatible with said **indicator.** The **sensor** is suitable for blood anal.

ST solid state **sensor oxygen** detn blood; **sensor carbon dioxide** detn blood

IT Blood analysis
Gas analysis
pH
(**oxygen** and **carbon dioxide** and pH determination in blood by solid state **sensor** containing silicone rubber)

IT Rubber, silicone, analysis
Siloxanes and Silicones, analysis
RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST (Analytical study); USES (Uses)
(**oxygen** and **carbon dioxide** and pH determination in blood by solid state **sensor** containing silicone rubber)

IT **Sensors**
(**gas, oxygen** and **carbon dioxide** and pH determination in blood by solid state **sensor** containing silicone rubber)

IT **124-38-9, Carbon dioxide**, analysis
7782-44-7, Oxygen, analysis
RL: ANT (Analyte); ANST (Analytical study)
(**oxygen** and **carbon dioxide** and pH determination in blood by solid state **sensor** containing silicone rubber)

IT 143-74-8, Phenol red 17756-58-0, Tetraoctylammonium hydroxide **36309-88-3**, Tris(4,7-diphenyl-1,10-phenanthroline) ruthenium dichloride
RL: ARG (Analytical reagent use); DEV (Device component use); ANST (Analytical study); USES (Uses)
(**oxygen** and **carbon dioxide** and pH determination in blood by solid state **sensor** containing silicone rubber)

IT 168695-48-5 168695-50-9D, trimethylsilyl-terminated 168695-51-0D, trimethylsilyl-terminated
RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST (Analytical study); USES (Uses)
(**oxygen** and **carbon dioxide** and pH determination in blood by solid state **sensor** containing silicone rubber)

IT **124-38-9, Carbon dioxide**, analysis
7782-44-7, Oxygen, analysis
RL: ANT (Analyte); ANST (Analytical study)
(**oxygen** and **carbon dioxide** and pH determination in blood by solid state **sensor** containing silicone rubber)

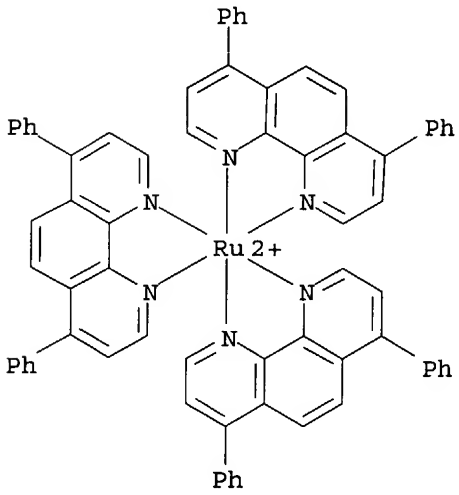
RN 124-38-9 HCAPLUS
CN Carbon dioxide (8CI, 9CI) (CA INDEX NAME)

O=C=O

RN 7782-44-7 HCAPLUS
CN Oxygen (8CI, 9CI) (CA INDEX NAME)

O=O

IT **36309-88-3**, Tris(4,7-diphenyl-1,10-phenanthroline) ruthenium dichloride
RL: ARG (Analytical reagent use); DEV (Device component use); ANST (Analytical study); USES (Uses)
(**oxygen** and **carbon dioxide** and pH determination in blood by solid state **sensor** containing silicone rubber)
RN 36309-88-3 HCAPLUS
CN Ruthenium(2+), tris(4,7-diphenyl-1,10-phenanthroline-κN1,κN10)-, dichloride, (OC-6-11)- (9CI) (CA INDEX NAME)



●2 Cl⁻

L94 ANSWER 15 OF 19 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1994:207584 HCAPLUS
DN 120:207584
ED Entered STN: 16 Apr 1994
TI Method and compositions for manufacture of optical-fiber chemical **microsensors**
IN Nelson, Alan M.; Soikowski, Carmen L.
PA Puritan-Bennett Corp., USA
SO Eur. Pat. Appl., 8 pp.
CODEN: EPXXDW
DT Patent
LA English
IC ICM G01N021-77
ICS G01N021-64
CC 79-2 (Inorganic Analytical Chemistry)

Section cross-reference(s): 9

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 568274	A1	19931103	EP 1993-303162	19930422 <--
	R: DE, FR, GB, IE, IT				
	US 5262192	A	19931116	US 1992-874031	19920427 <--
	CA 2093592	AA	19931028	CA 1993-2093592	19930407 <--
	JP 06074901	A2	19940318	JP 1993-101143	19930427 <--
	US 5326585	A	19940705	US 1993-108108	19930817 <--
PRAI	US 1992-874031		19920427 <--		

AB The method involves applying an uncured analyte **sensing matrix** to an optical fiber and **crosslinking** the **sensing matrix** in situ on the optical fiber to yield an ion-permeable **microsensor** which can be used intravascularly to monitor pH, or partial pressures of **O2** or **CO2** in blood. The liquid form of the **sensing matrix** contains a **crosslinking** agent and a **crosslinking** inhibitor which can be removed by exposure to elevated temps. to allow the **sensing matrix** to **crosslink** and cure as desired, in situ, on the surface of the optical fiber. A liquid **crosslinking** overcoat layer containing a **crosslinking** agent and a **crosslinking** inhibitor which can be removed by exposure to heat can also be applied over the cured **sensing matrix.**

ST optical fiber chem **microsensor** manuf compn

IT **Indicators**
(**dyes**, for manufacture of optical-fiber chemical **microsensors**, method and compns. involving)

IT **Siloxanes and Silicones, uses**
RL: ANST (Analytical study)
(for manufacture of optical-fiber chemical **microsensors**, method and compns. involving)

IT Optical fibers
(**microsensor** containing, method and composition for manufacture of)

IT Blood analysis
(optical-fiber **microsensor** for)

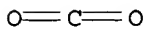
IT **Siloxanes and Silicones, uses**
RL: USES (Uses)
(di-Me, vinyl-terminated, for manufacture of optical-fiber chemical **microsensors**, method and compns. involving)

IT **Sensors**
(**miniaturized**, chemical, method and composition for manufacture of **optical**-fiber)

IT **124-38-9**, **Carbon dioxide**, analysis
7782-44-7, **Oxygen**, analysis
RL: ANT (Analyte); ANST (Analytical study)
(determination of, in blood, optical-fiber **microsensor** for, method and composition for manufacture of)

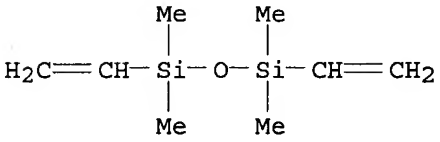
IT 127-06-0, Acetone oxime 141-97-9, Ethyl acetoacetate 191-07-1, Coronene 191-48-0, Decacyclene 2321-07-5 **2627-95-4**, Divinyl **tetramethyldisiloxane** 11081-15-5, Isooctylphenol 13463-67-7, Titanium dioxide, uses 24801-88-5 27928-00-3, 8-Hydroxy-1,3,6-pyrenetrisulfonic acid 28518-77-6, Acrylamide-hydroxyethyl methacrylate **copolymer** 65152-07-0, 2,4-Diisobutylphenol 153889-64-6 64-17-5, Ethanol, uses 75-65-0, uses 78-08-0, **Vinyltriethoxysilane** 88-75-5, o-Nitrophenol 90-05-1, Guaiacol 96-29-7, Methyl ethyl ketone oxime 100-61-8, uses 105-53-3, Diethyl malonate 106-48-9, p-Chlorophenol 108-39-4, uses 108-46-3, 1,3-Benzenediol, uses 108-73-6, Phloroglucinol 108-98-5, Benzenethiol, uses 112-55-0, 1-Dodecanethiol 122-39-4, Diphenyl amine, uses 123-54-6, Acetyl acetone, uses
RL: ANST (Analytical study)
(for manufacture of optical-fiber chemical **microsensors**, method and

compns. involving)
IT **124-38-9**, **Carbon dioxide**, analysis
7782-44-7, **Oxygen**, analysis
RL: ANT (Analyte); ANST (Analytical study)
(determination of, in blood, optical-fiber **microsensor** for, method and composition for manufacture of)
RN 124-38-9 HCAPLUS
CN Carbon dioxide (8CI, 9CI) (CA INDEX NAME)



RN 7782-44-7 HCAPLUS
CN Oxygen (8CI, 9CI) (CA INDEX NAME)

IT **2627-95-4**, Divinyl **tetramethyldisiloxane**
RL: ANST (Analytical study)
(for manufacture of optical-fiber chemical **microsensors**, method and compns. involving)
RN 2627-95-4 HCAPLUS
CN Disiloxane, 1,3-diethenyl-1,1,3,3-tetramethyl- (9CI) (CA INDEX NAME)



L94 ANSWER 16 OF 19 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1992:422907 HCAPLUS
DN 117:22907
ED Entered STN: 26 Jul 1992
TI **Dye matrix** for water-**insensitive** tissue **oxygen sensor**
IN Oviatt, Henry W., Jr.; Reich, Cary J.; Morehead, Steven R.; Lusk, James R.
PA Innerspace, Inc., USA
SO PCT Int. Appl., 34 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM G01N033-00
CC 9-15 (Biochemical Methods)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 9205441	A1	19920402	WO 1991-US6716	19910917 <--

W: CA, JP
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, NL, SE
PRAI US 1990-583415 19900917 <--
AB A **dye matrix** is provided for use in an optical **sensor.** In the preferred embodiment, sufficient **gas-sensitive** organometallic aromatic-containing **fluorescent dye** is dissolved in an **organosilane polymer** permeable to the **gas** to measure concns. of **oxygen** or other **gases** in body tissue. The **polymer** contains

sufficient aromatic substituents to prevent the **dye** from crystallizing and sufficient **crosslinker** to prevent an increase in turbidity in the **dye matrix** in an aqueous environment for up to 72 h. A reference **fluorescent dye** can also be dissolved in the **dye matrix** to aid in screening out the "noise" introduced by muscle movement when the **sensor** is used in a tissue probe, such as a tissue **oxygen** probe.

ST **siloxane** organometallic **dye matrix**;
gas analysis **siloxane dye matrix**;
oxygen analysis **siloxane dye matrix**

IT **Siloxanes and Silicones, uses**
RL: USES (Uses)
(diethoxy, composition containing, **fluorescent dye**-containing, for **gas** anal. in aqueous environment)

IT **Polymers**, uses
Siloxanes and Silicones, uses
RL: USES (Uses)
(**fluorescent dye**-containing, for **gas** anal. in aqueous environment)

IT **Gas analysis**
(**fluorescent dye-siloxane matrix** for, in aqueous environment)

IT Organometallic compounds
RL: USES (Uses)
(**fluorescent dyes, siloxane matrix** containing, for **gas** anal. in aqueous environments)

IT **Siloxanes and Silicones, uses**
RL: USES (Uses)
(Me Ph, **fluorescent dye**-containing, for **gas** anal. in aqueous environment)

IT **Siloxanes and Silicones, uses**
RL: USES (Uses)
(alkyl, **fluorescent dye**-containing, for **gas** anal. in aqueous environment)

IT **Siloxanes and Silicones, uses**
RL: USES (Uses)
(aminoalkyl, **fluorescent dye**-containing, for **gas** anal. in aqueous environment)

IT **Siloxanes and Silicones, uses**
RL: USES (Uses)
(cyanoalkyl, **fluorescent dye**-containing, for **gas** anal. in aqueous environment)

IT **Siloxanes and Silicones, uses**
RL: USES (Uses)
(di-Me, composition containing, **fluorescent dye**-containing, for **gas** anal. in aqueous environment)

IT **Siloxanes and Silicones, uses**
RL: USES (Uses)
(di-Me, di-Ph, composition containing, **fluorescent dye** -containing, for **gas** anal. in aqueous environment)

IT **Dyes**
(**fluorescent, siloxane matrix** containing, for **gas** anal. in aqueous environment)

IT **Siloxanes and Silicones, uses**
RL: USES (Uses)
(haloalkyl, **fluorescent dye**-containing, for **gas** anal. in aqueous environment)

IT Hydrocarbons, uses
RL: USES (Uses)
(polycyclic, **fluorescent dyes, siloxane matrix** containing, for **gas** anal. in aqueous environments)

IT 91237-66-0 129-00-0, Pyrene, biological studies
RL: ANST (Analytical study)

AT 132260 E 19960115 AT 1990-108333 19900502 <--
PRAI US 1989-343423 19890426 <--
EP 1990-108333 19900502 <--

AB This method and material uses **indicators**, namely polynuclear aroms., or more specifically perylene derivs., together with an appropriate **matrix** such as **crosslinked polydimethylsiloxane** to provide a **sensor** element for insertion in a fluid stream, preferably by means of an appropriate system. By irradiating the resulting **matrix** with light of a specific wavelength or wavelength range, which may or may not be the wavelength of maximum absorption, while measuring the **fluorescent** emission over at least 2 other specific wavelength ranges, different portions of the emission spectrum have been observed to have different **sensitivities** to O quenching. In this way, a means is provided for referencing the output of **indicators** which employ the phenomenon of **fluorescence** quenching which is simple and easily implemented in systems and which provides a means of accurate normalization within a wide variation in the **fluorescent** emission of the **indicator.** This method can be applied to a variety of **indicators** and does not require addnl. complex electronics or optics associated with the excitation and measurement scheme. Possible application to blood anal. is **indicated.**

ST **oxygen** detn fluid **fluorescence** quenching; fluid analysis **oxygen fluorescence** quenching

IT **Fluorescence** quenching
(in determination of **oxygen** in fluids, method and material involving)

IT Blood analysis
Gas analysis
(**oxygen** determination in, **fluorescence**-quenching method and material for)

IT **Dyes**
(**fluorescent**, in determination of **oxygen** in fluids, **fluorescence**-quenching method and material involving)

IT Aromatic hydrocarbons, uses and miscellaneous
RL: USES (Uses)
(polycyclic, in determination of **oxygen** in fluids, **fluorescence**-quenching method and material involving)

IT **7782-44-7**, **Oxygen**, analysis
RL: ANT (Analyte); ANST (Analytical study)
(determination of, in fluids, **fluorescence**-quenching method and material for)

IT 191-07-1, Coronene 198-55-0, Perylene 198-55-0D, Perylene, derivs. 6596-38-9, Naphtho[8,1,2-abc]coronene
RL: ANST (Analytical study)
(in determination of **oxygen** in fluids, **fluorescence**-quenching method and material involving)

IT **7782-44-7**, **Oxygen**, analysis
RL: ANT (Analyte); ANST (Analytical study)
(determination of, in fluids, **fluorescence**-quenching method and material for)

RN 7782-44-7 HCAPLUS
CN Oxygen (8CI, 9CI) (CA INDEX NAME)

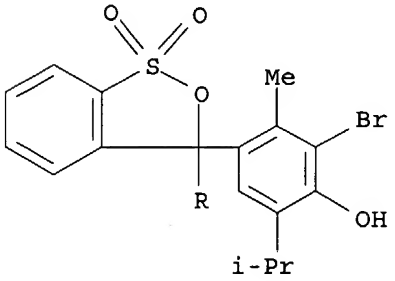
O=O

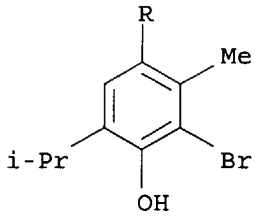
L94 ANSWER 19 OF 19 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1989:54127 HCAPLUS
DN 110:54127
ED Entered STN: 17 Feb 1989
TI **Gas sensor**

(as **fluorescent dye**, **siloxane matrix** containing, for **gas** anal. in aqueous environments)
IT 125132-60-7
RL: ANST (Analytical study)
(as reference **fluorescent dye**, **siloxane matrix** containing, for **gas** anal. in aqueous environments)
IT 141927-76-6
RL: ANST (Analytical study)
(composition containing, **fluorescent dye**-containing, for **gas** anal. in aqueous environment)
IT **7782-44-7**, **Oxygen**, analysis
RL: ANT (Analyte); ANST (Analytical study)
(determination of, in aqueous environments, **fluorescent dye-siloxane matrix** for)
IT 7440-18-8D, Ruthenium, complexes
RL: ANST (Analytical study)
(divalent, as **fluorescent dyes**, **siloxane matrix** containing, for **gas** anal. in aqueous environments)
IT **7782-44-7**, **Oxygen**, analysis
RL: ANT (Analyte); ANST (Analytical study)
(determination of, in aqueous environments, **fluorescent dye-siloxane matrix** for)
RN 7782-44-7 HCAPLUS
CN Oxygen (8CI, 9CI) (CA INDEX NAME)

L94 ANSWER 17 OF 19 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1991:622079 HCAPLUS
DN 115:222079
ED Entered STN: 15 Nov 1991
TI Fiber-optic **sensor** for ammonia vapors of variable temperature
AU Potyrailo, R. A.; Golubkov, S. P.; Borsuk, P. S.
CS Spec. Instrum. Res. Inst., Kiev Polytech. Inst., Kiev, 252056, USSR
SO Proceedings of SPIE-The International Society for Optical Engineering (**1991**), 1572(Int. Conf. Opt. Fibre Sens. China OFS(C) '91, 1991), 434-8
CODEN: PSISDG; ISSN: 0277-786X
DT Journal
LA English
CC 79-2 (Inorganic Analytical Chemistry)
AB A fiber-optic **sensor**, based on the principle of reversible changes in absorption spectrum of a **dye**-film, containing pH-**dye**, entrapped in a **polymer matrix**, was developed for use in **sensing** of ammonia vapors of variable temperature Differences of the absorption spectra of pH-**dye** in water solution and in the **polymer matrix** were investigated. The design of the **sensor** is presented and the exptl. results are discussed.
ST ammonia detn fiber optic **sensor**; Bromothymol Blue fiber optic **sensor** ammonia
IT **Gas analysis**
(ammonia determination in, at variable temperature, fiber-optic **sensor** for)
IT **Dyes**
Polymers, uses and miscellaneous
RL: USES (Uses)
(in ammonia fiber-optic **sensor**)
IT Optical fibers
(**sensor**, for ammonia)
IT **Siloxanes and Silicones, uses and miscellaneous**

RL: USES (Uses)
(Me Ph, in ammonia fiber-optic **sensor**)
IT 7664-41-7, Ammonia, analysis
RL: ANT (Analyte); ANST (Analytical study)
(determination of, fiber-optic **sensor** for)
IT **76-59-5**, Bromothymol Blue
RL: ANST (Analytical study)
(**siloxane** containing, in ammonia fiber-optic **sensor**)
IT **76-59-5**, Bromothymol Blue
RL: ANST (Analytical study)
(**siloxane** containing, in ammonia fiber-optic **sensor**)
RN 76-59-5 HCAPLUS
CN Phenol, 4,4'-(1,1-dioxido-3H-2,1-benzoxathiol-3-ylidene)bis[2-bromo-3-methyl-6-(1-methylethyl)- (9CI) (CA INDEX NAME)





L94 ANSWER 18 OF 19 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1991:220395 HCAPLUS
DN 114:220395
ED Entered STN: 31 May 1991
TI **Fluorescence**-quenching method and material for measurement of **oxygen** concentration
IN Divers, George A., III; Hui, Henry K.; Gottlieb, Amos
PA USA
SO Can. Pat. Appl., 20 pp.
CODEN: CPXXEB
DT Patent
LA English
IC ICM G01N021-25
CC 79-6 (Inorganic Analytical Chemistry)
Section cross-reference(s): 9
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
PI	CA 2015415	AA	19901026	CA 1990-2015415	19900425	<--
	US 5094959	A	19920310	US 1989-343423	19890426	<--
	JP 03063550	A2	19910319	JP 1990-111579	19900426	<--
	EP 454886	A1	19911106	EP 1990-108333	19900502	<--
	EP 454886	B1	19951227			

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE

IN Yafuso, Masao; Suzuki, John K.
PA Cardiovascular Devices, Inc., USA
SO Eur. Pat. Appl., 8 pp.
CODEN: EPXXDW
DT Patent
LA English
IC ICM G01N021-64
ICS A61B005-00
CC 9-1 (Biochemical Methods)
FAN.CNT 5

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 263692	A2	19880413	EP 1987-308883	19871007 <--
	EP 263692	A3	19900418		
	R: DE, FR, GB				
	US 4824789	B1	19960813	US 1986-917912	19861010 <--
PRAI	US 1986-917912		19861010 <--		

AB A **gas sensor** has a 1st aqueous phase composed of a soluble **dye** in a buffer. One or more addnl. agent can be further added to the aqueous phase, e.g. an emulsification enhancement agent. The aqueous phase is homogenized into a **polymeric** precursor forming an emulsion of the aqueous phase in the **polymeric** precursor. A **catalyst** and a **crosslinking** agent are added and the **polymeric** precursor is allowed to **polymerize** to form an emulsoid of microcompartments of the aqueous phase in a **polymeric** 2nd phase. The microcompartments of the aqueous phase are dispersed through and permanently suspended in the **polymeric** 2nd phase. Application of the **sensor** to the determination of blood **gases** such as **CO2** is **indicated.** Hydroxypyrene-3,6,8-trisulfonic acid 0.1048, NaHCO3 0.0106, NaCl 0.1284, dextran (mol. weight 500,000) 6.666, and thimerosal 0.02 g were dissolved in 20 g H2O, and 2 mL of the solution was homogenized with 10 g Petrarch PE 1055 (**polydimethoxysilane**) containing a trace amount of a **Pt catalyst** to form an emulsion. **Crosslinker** (1.0 g) was stirred in, and a drop of the emulsion was placed on the end of a 125-μm diameter fiber optic cable to form a **CO2 gas sensor.** The aqueous phase microcompartments were about 2 μm in diameter

ST **gas sensor dye polymer** emulsion; **carbon dioxide sensor** blood permeation

IT **Gas analysis**
(determination of, **sensor** containing **dye** solution dispersed in **polymer matrix** for)

IT Optical detectors
(**dye** solution dispersed in **polymer matrix** in, for **gas** anal.)

IT **Polymers**, uses and miscellaneous
RL: USES (Uses)
(**dye** solution dispersed in, **gas sensor** containing)

IT Emulsions
(of **dye** aqueous solution in **polymer matrix**, **gas sensor** containing)

IT **Dyes**
(**polymer matrix** containing dispersed droplets of aqueous solution of, **gas sensor** containing)

IT **Indicators**
(**acid-base**, **polymer matrix** containing dispersed aqueous solution of, **gas sensor** containing)

IT **Siloxanes and Silicones, uses and miscellaneous**
RL: USES (Uses)
(di-Me, **dye** solution dispersed in, **gas sensor** containing)

IT **124-38-9**, **Carbon dioxide**, analysis
RL: ANT (Analyte); ANST (Analytical study)
(determination of, **sensor** containing **dye** solution dispersed in **polymer** for)
IT 92681-38-4, 1,3,6-Pyrenetrisulfonic acid
RL: ANST (Analytical study)
(**polymer matrix** containing dispersed droplets of aqueous solution of, **gas sensor** containing)
IT **124-38-9**, **Carbon dioxide**, analysis
RL: ANT (Analyte); ANST (Analytical study)
(determination of, **sensor** containing **dye** solution dispersed in **polymer** for)
RN 124-38-9 HCAPLUS
CN Carbon dioxide (8CI, 9CI) (CA INDEX NAME)

O=C=O

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FILE LAST UPDATED: 24 JUN 2004 <20040624/UP>
MOST RECENT DERWENT UPDATE: 200440 <200440/DW>
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>>> FOR INFORMATION ON ALL DERWENT WORLD PATENTS INDEX USER GUIDES, PLEASE VISIT:
http://thomsonderwent.com/support/userguides/ <<<

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>>> THE DISPLAY LAYOUT HAS BEEN CHANGED TO ACCOMODATE THE NEW FORMAT GERMAN PATENT APPLICATION AND PUBLICATION NUMBERS. SEE ALSO:
http://www.stn-international.de/archive/stnews/news0104.pdf <<<

=> d all abeq tech abex tot l141

L141 ANSWER 1 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
AN 2004-072952 [08] WPIX
CR 2004-013269 [02]; 2004-013270 [02]
DNN N2004-058699 DNC C2004-030362
TI Production of **polymer** layers on a transparent support, for use

in **sensors**, e.g. for blood analysis, comprises **coating** the support with a **photopolymerizable** liquid composition and irradiating the liquid through the support.

DC A14 A35 A89 B04 D16 J04 P42 S03
IN HOENES, J; HORN, C; KNAPPE, W
PA (HOFF) ROCHE DIAGNOSTICS GMBH
CYC 1
PI DE 10221840 A1 20031127 (200408)* 11 B05D007-24
ADT DE 10221840 A1 DE 2002-10221840 20020516
PRAI DE 2002-10221840 20020516
IC ICM B05D007-24
ICS B05D003-06
AB DE 10221840 A UPAB: 20040202
NOVELTY - Production (M1) of **polymer** layers on a transparent support comprises **coating** the prepared support with a **photopolymerizable** liquid composition (I), irradiating (I) through the support so as to form a layer of **polymer** with a predetermined thickness, and removing remaining liquid (I).

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for:

(1) apparatus for the production of **polymer** layers, comprising (a) means for holding and possibly moving a support, (b) means for the application of (I), (c) means for irradiating (I) through the support as above and (d) optional means for removing **unpolymerized** (I)

(2) a method (M2) for the production of a **sensor**, by carrying out the process as above (using a composition (I) containing **indicator**(s)) and then mounting the support with the **indicator**-containing **polymer** layer in a **sensor** (which detects the reaction of the **indicator** with an analyte in a sample).

USE - For the production of **sensors**, preferably optical and/or electrochemical **sensors** with an immobilized **indicator** (possibly an enzyme-coenzyme complex) in the **polymer** layer (claimed). Applications include the determination of physico-chemical parameters (e.g. temperature and/or partial pressure of **gases** such as **oxygen**, **carbon dioxide**, nitrogen oxides etc.) or biochemical parameters (e.g. analytes in biological samples such as body fluids).

ADVANTAGE - A simple method enabling the production of adherent, hydrophilic **polymer** layers of predetermined, uniform thickness on a support.

DESCRIPTION OF DRAWING(S) - **Sensor** produced by the claimed method.

transparent support 1
polymer layer with **indicator** 2
sample, e.g. blood 3
light source 4
detector (e.g. **fluorescence** detector) 5
optional filter 6

Dwg.1/4
FS CPI EPI GMPI
FA AB; GI; DCN
MC CPI: A10-B06; A11-B05C; A12-E13; B04-B04D5; B04-C03; B04-L01; **B11-C07B3**; B11-C08; B11-C08E3; B11-C08E6; B12-K04; B12-K04A; D05-H09; D05-H10; J04-B01; J04-C04
EPI: **S03-E04E**; S03-E09E; S03-E14H
TECH UPTX: 20040202
TECHNOLOGY FOCUS - **POLYMERS** - Preferred Supports: At least partly transparent supports with a thickness of at least 5 microns, consisting of plastics, glass or quartz. Preferred Method: Method M1 uses compositions (I) containing at least one **photopolymerizable** substance (especially acrylic monomers, vinylaromatic monomers and/or functionalized polyvinylpyrrolidones) and photoinitiator(s). The

polymer layer has a thickness of not more than 500 (preferably not more than 5) microns, which is controlled by varying the intensity and/or duration of irradiation and/or by adding substances which absorb the **polymerization** light. The resulting **polymer** layer contains **indicator**(s) (preferably macromolecular substances or **catalysts**, especially enzymes) and may also be **crosslinked** , preferably with a macromolecule in the **crosslinked** layer. Irradiation is performed with UV light, and **polymerization** is performed as a continuous process, preferably by applying (I) continuously to one point on a moving support and irradiating it at a second position.

TECHNOLOGY FOCUS - INSTRUMENTATION AND TESTING - Preferred Method: M2 uses enzymes as **indicators** (optionally in the form of enzyme-coenzyme complexes) with optical and/or electrochemical detection systems. Optical systems comprise a light source for irradiating the **polymer** layer (preferably from the back through the support) and a detector for the emitted light, preferably a **fluorescence** detector.

ABEX UPTX: 20040202

EXAMPLE - A suspension was produced by mixing 2.5 g acrylamide, 0.7 g methylene-bis-acrylamide, 0.05 g 2,2-dimethoxy-2-phenylacetophenone, 5 g glycerol, 1.4 g hydroxyethyl methacrylate, 0.4 g methyl methacrylate, 1 g Crodasinic **O** solution (pH 8; 0.3 g l) and 0.3 g N,N'-(1,2-dihydroxyethylene)-bis-acrylamide. This suspension (0.5 ml) was mixed with 0.5 ml of a solution of glucose dehydrogenase (100 mg/ml) and homogenized with the aid of ultrasound, then the solution obtained was poured onto corona-treated film and irradiated for 20 minutes through the base film with a conventional UV source; the **polymer** was washed with water and dried to give a layer with a thickness of less than 2 microns. When fresh glucose/NAD+ solution (GKL-3 solution; 300ml/dl glucose, 1 ml/6.4 mg NAD+) was spotted onto the film, strong **fluorescence** was immediately visible under a UV lamp.

L141 ANSWER 2 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
AN 2003-758155 [72] WPIX
DNN N2003-607518 DNC C2003-208346
TI **Sensor** formulation for detection of **gas** composition comprises **fluorophores**, **acid-base indicator chromophore dye**, and **polymeric matrix.**
DC A89 B04 D16 E24 J04 S03
IN **MING-HSUING, Y; YEH, M**
PA **(BECT) BECTON DICKINSON & CO**; (YEHM-I) YEH M
CYC 33
PI EP 1327874 A2 20030716 (200372)* EN 10 G01N021-64 <--
R: AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LT LU LV MC MK NL PT RO SE SI SK TR
JP 2003262628 A 20030919 (200372) 31 G01N031-00 <--
US 2003133123 A1 20030717 (200372) C12Q001-04 <--
ADT EP 1327874 A2 EP 2003-370 20030110; JP 2003262628 A JP 2003-5019 20030110; US 2003133123 A1 **US 2002-41661 20020110**
PRAI **US 2002-41661 20020110**
IC ICM C12Q001-04; **G01N021-64**; **G01N031-00**
ICS C12Q001-06; G01B009-02; **G01N021-77**; **G01N021-78**; **G01N031-22**
AB EP 1327874 A UPAB: 20031107
NOVELTY - **Sensor** formulation for detection of **gas** composition, comprising at least two **fluorophores**, an **acid-base indicator chromophore dye**, and a **polymeric matrix**, where the **chromophore dye** and the **fluorophores** are mixed within a **polymeric matrix** prior to **polymerization**, is new.
DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for:

(1) detecting the presence of **respiring** microorganisms, comprising:
(a) providing the **sensor** formulation;
(b) providing a **fluorescence** reading device having a first **sensor** element and a second **sensor** element, the first element being tuned to the same wavelength of the first **fluorophore** and the second **sensor** element being tuned to the same wavelength of the second **fluorophore**;
(c) providing a microorganism for monitoring;
(d) exposing the microorganism to the **sensor** formulation in the presence of the reading device, and
(e) recording the response of the **sensor** elements to the microorganism; and
(2) monitoring the effects of a composition on the metabolism of a microorganism, comprising:
(a) exposing a microorganism to a composition to be tested for its effect on the metabolism of the microorganism;
(b) exposing the microorganism to the **sensor** formulation in the presence of the reading device; and
(c) recording the response of the first **sensor** element and the second **sensor** element to the microorganism.
USE - For detecting the presence of, and evaluating the metabolic activity of, anaerobic or aerobic microorganisms present in a liquid or semi-solid media. The system can detect and/or monitor the activity or **oxygen** consuming enzymes or enzyme systems as well as the effect of growth inhibiting compounds such as antibiotics on microorganisms.
ADVANTAGE - The system can independently and simultaneously monitor **oxygen** levels and **carbon dioxide** levels in a **gas** composition. The system is **sensitive**, effective and speedy.
Dwg.0/2

FS CPI EPI
FA AB; DCN
MC CPI: **A12-L04B**; B04-F10; B05-A03B; B06-D03; B10-A01; B11-C07B1; **B11-C07B3**; B11-C10; B12-K04; D05-H09; E11-Q03C; **E24-A05**; **E25-B03**; **E25-D**; **E25-E01** ; J04-B01A; J04-C04
EPI: S03-E04D; **S03-E04E**
TECH UPTX: 20031107
TECHNOLOGY FOCUS - CHEMICAL ENGINEERING - Preferred Formulation: The first **fluorophore** responds to changes in the concentration of **oxygen** in a **gas** composition. The **chromophore dye** responds to changes in the concentration of **carbon dioxide** in the **gas** composition to modulate the signal output of the second **fluorophore.** The formulation further comprises two different **silica powders.** The first **powder** has a greater **density** as compared to the lighter **density** second **powder.** The **fluorophore** is **coated** on **granules** of the first **silica powder** and the second **fluorophore** is **coated** on the second **silica powder.** The **chromophore dye** is evenly dispersed within the **matrix.** The first **fluorophore** is segregated from the second **fluorophore** within the **polymeric matrix.** The **matrix** comprises at least two **premixture** ingredients, a first **polymer** component and a second **crosslinker** component and optionally a **premixture** ingredients of a **catalyst** and an inhibitor. The **catalyst** is a platinum **catalyst.** The **matrix** further contains a inhibitor.
Preferred Detection Method: The **fluorophore** is tris(4,7-diphenyl-1,10-phenanthroline) ruthenium chloride pentahydrate/ruthenium (II) chloride hydrate **fluorophore** and optionally the second **fluorophore** is 1,1',3,3,3',3'-

hexamethylindodicarbocyanine iodide **dye**. The **chromophore indicator dye** is cresol red, and the **acid-base indicator dye** is bromomethylol blue.

L141 ANSWER 3 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
AN 2003-755208 [71] WPIX
CR 1999-370143 [31]; 2000-060831 [05]; 2001-280518 [29]; 2001-522464 [57]
DNN N2003-605076 DNC C2003-207214
TI **Sensor** plate, for detecting presence of microorganisms in clinical and non-clinical specimens, has microorganism immobilization **matrix** layer and **sensor** layer that can undergo detectable change due to presence of microorganisms.
DC A89 B04 D13 D16 J04 S03
IN HYMAN, J M; JEFFREY, S R; MARESCH, M J; MATSUMURA, P M; THORPE, T C
PA (HYMA-I) HYMAN J M; (JEFF-I) JEFFREY S R; (MARE-I) MARESCH M J; (MATS-I) MATSUMURA P M; (THOR-I) THORPE T C
CYC 1
PI US 2003100104 A1 20030529 (200371)* 13 C12M001-34
ADT US 2003100104 A1 Cont of US 1997-989560 19971212, Cont of US 1999-320386 19990527, US 2000-741402 20001218
FDT US 2003100104 A1 Cont of US 5976827, Cont of US 6197577
PRAI US 1997-989560 19971212; US 1999-320386 19990527; US 2000-741402 20001218
IC ICM C12M001-34
AB US2003100104 A UPAB: 20031105
NOVELTY - A **sensor** plate comprising a container, an immobilization layer for immobilizing a sample to be tested for the presence or enumeration of microorganisms, and a **sensor** layer between the immobilization layer and a wall of the container, is new. A portion of the **sensor** layer can undergo a detectable change due to the presence of microorganisms immobilized on and/or in the immobilization layer.

USE - For detecting the presence of microorganisms in clinical and non-clinical specimens.

ADVANTAGE - The novel **sensor** plate provides an environment to culture microbial organism colonies from a liquid sample, and a means to facilitate microbial detection and quantification, either manually or with an instrument.

Dwg.0/5
FS CPI EPI
FA AB; DCN
MC CPI: A12-V03C2; A12-W11L; B04-C02A1; B04-C02C; B04-C02D; B04-C02E; B04-C03; B04-F10; B04-F11; B04-N02; B05-B02C; B05-C01; B05-C03; B05-C04; B05-C05; B05-C08; **B11-C07B3**; B12-K04A4; B12-K04E; D03-K03; D03-K04; D05-H04; J04-C04
EPI: S03-E04D; S03-E14H
TECH UPTX: 20031105
TECHNOLOGY FOCUS - INSTRUMENTATION AND TESTING - Preferred Component: The immobilization layer further comprises growth components for facilitating growth of microorganisms. The container is a sealed container having a headspace above the immobilization layer. A **gas** permeable membrane is provided in a wall of the container. A removable **gas** impermeable seal is positioned adjacent the **gas** permeable membrane. The **sensor** layer comprises an **indicator** having a change detectable by imaging, **fluorescence** reflectance technology. The immobilization layer comprises an immobilized sample with microorganisms. Conditioning components are provided near to or within the immobilization layer for improving microorganism detection capabilities. Preferred Property: The **sensor** layer is capable of undergoing a localized change in the ultraviolet (UV), visible and/or infrared spectrum. It undergoes a detectable change in response to changes in **oxygen**, hydrogen, hydrogen sulfide, **carbon dioxide**, ammonia, organic acid, nitrogen dioxide, or pH. It

exhibits a change in **fluorescence** intensity or visible **color** over a pH of 5-11.

TECHNOLOGY FOCUS - BIOTECHNOLOGY - Preferred Component: The conditioning components comprise lytic agents, lytic enzymes, surfactants and components to neutralize growth inhibitors.

TECHNOLOGY FOCUS - **POLYMERS** - Preferred Component: Adhesive layers are provided between the immobilization layer and the **sensor** layer, and the **sensor** layer and the container wall. The immobilization layer comprises a gelling agent that is a solid gel, a semi-solid gel, or a **powdered** gel. The gelling agents comprise gums, agars, agaroses, carageenans, bentonite, alginates, collagens, gelatins, fused silicates, water-soluble starches, polyacrylates, celluloses, cellulose derivatives, polyethylene glycols, polyethylene oxides, polyvinyl alcohols, dextrans, polyacrylamides, or polysaccharides. The **sensor** layer comprises silicone.

L141 ANSWER 4 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
AN 2003-415337 [39] WPIX
DNN N2003-330868 DNC C2003-110007
TI **Fluorescence** assay for detecting microorganisms comprises using a transparent container molded from a cyclic olefin **copolymer.**
DC A92 B04 D16 S03
IN GENTLE, T M; SULLIVAN, T M; TICE, G; **YEH, M**
PA (**BECT**) **BECTON DICKINSON & CO**
CYC 1
PI US 6432665 B1 20020813 (200339)* 6 C12Q001-04
ADT US 6432665 B1 US 2000-497781 20000203
PRAI US 2000-497781 20000203
IC ICM C12Q001-04
ICS C12Q001-00; C12Q001-02; G01N033-53
AB US 6432665 B UPAB: 20030619
NOVELTY - Detecting microorganisms in a sample by adding it to a transparent container containing a growth medium, irradiating the container with an excitation light source for a **fluorescent sensor** (inside the container), and comparing the resulting **fluorescent** light intensity with a control, by using a container molded from a cyclic olefin **copolymer**, is new.
USE - The method can be used to detect a variety of microorganisms, especially mycobacteria.
ADVANTAGE - The container is sufficiently transparent to allow optical detection of **fluorescence** and visual detection of any turbidity in the growth medium, provides a long shelf life for the growth medium when sealed with a closure (the growth medium remains free of contamination after storage for at least a year at 40 deg. C), is heat-resistant to at least 250 deg. C, and can withstand internal pressures of about 25 psi.
DESCRIPTION OF DRAWING(S) - The drawing shows an exploded side elevational view of the container.
Dwg.1/2
FS CPI EPI
FA AB; GI; DCN
MC CPI: A04-G; A04-G06; A12-L02; A12-L04; A12-P01B; A12-W11L; B11-C07B3; B12-K04E; D05-H04
EPI: S03-E14H4
TECH UPTX: 20030619
TECHNOLOGY FOCUS - ORGANIC CHEMISTRY - Preferred **Sensor**: The **fluorescent sensor** is preferably a tris-4,7-diphenyl-1,10-phenanthroline ruthenium (II) salt, a tris-2,2'-bipyridyl ruthenium (II) salt or 9,10-diphenyl anthracene.

TECHNOLOGY FOCUS - **POLYMERS** - Preferred **Copolymer**: The

cyclic olefin **copolymer** is preferably a **copolymer** of a cyclic olefin and ethylene or a **copolymer** of formula (I):
n, m = integers;
R1-R5 = H or 1-8C alkyl.

ABEX UPTX: 20030619
WIDER DISCLOSURE - Also disclosed is the container.

SPECIFIC COMPOUNDS - The **fluorescent sensor** is tris-4,7-diphenyl-1,10-phenanthroline ruthenium (II) chloride or tris-2,2'-bipyridyl ruthenium (II) chloride.

L141 ANSWER 5 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
AN 2002-557754 [59] WPIX
CR 2002-723124 [78]
DNN N2002-441464 DNC C2002-158376
TI Optical-chemical **sensor** for **fluorescent** resonance energy transfer analysis, useful for determining e.g. pH in biological fluids, with donor and acceptor in separate chemical phases.
DC A89 B04 S03
IN KLIMANT, I
PA (HOFF) HOFFMANN LA ROCHE & CO AG F; (HOFF) ROCHE DIAGNOSTICS GMBH
CYC 22
PI WO 2002054076 A2 20020711 (200259)* GE 36 G01N033-58
RW: AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR
W: JP US
AT 2000002161 A 20021015 (200277) G01N021-76
AT 410601 B 20030415 (200329) G01N021-76
EP 1346220 A2 20030924 (200363) GE G01N033-542
R: AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE TR
JP 2004517321 W 20040610 (200438) 66 G01N021-64 <--
ADT WO 2002054076 A2 WO 2001-EP15186 20011221; AT 2000002161 A AT 2000-2161 20001229; AT 410601 B AT 2000-2161 20001229; EP 1346220 A2 EP 2001-984880 20011221, WO 2001-EP15186 20011221; JP 2004517321 W WO 2001-EP15186 20011221, JP 2002-554723 20011221
FDT AT 410601 B Previous Publ. AT 2000002161; EP 1346220 A2 Based on WO 2002054076; JP 2004517321 W Based on WO 2002054076
PRAI AT 2000-2161 20001229
IC ICM **G01N021-64**; G01N021-76; G01N033-542; G01N033-58
ICS **G01N021-78**; G01N033-483; G01N033-84
AB WO 200254076 A UPAB: 20040616
NOVELTY - Optical-chemical **sensor** that operates on the FRET (**fluorescent** resonance energy transfer) principle includes an acceptor (A; **chromophore** or luminophore) and a donor (D; luminophore) able to react with an analyte (I) in a test sample. A and D are in separate chemical phases, where the D phase is impermeable to the sample medium, or those component of it that affect the luminescent properties of D.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a method of quantitative and/or qualitative detection of (I), or a component of **gaseous** or liquid media, using the new **sensor.**

USE - The **sensor** is used for determination of:
(1) pH;

(2) the concentration or activity of ions (specifically lithium, sodium, potassium, magnesium, calcium or chloride), and

(3) in acidic or alkaline aqueous systems, components that are **gaseous** under normal conditions (**carbon dioxide** or ammonia), particularly in body fluids, specifically blood, plasma or serum.

ADVANTAGE - The **sensor** is less subject to interference from components of the sample (e.g. **oxygen**, water and amines) than known reagents and does not require difficult chemical syntheses to ensure that A and shielded D are close enough together.
Dwg.0/7

FS CPI EPI
FA AB; DCN
MC CPI: **A12-L04B**; B04-B04D; B04-C03B; B04-C03C; B05-A01A; B05-A01B; B05-C07; B10-A09B; B10-A16; B10-B01A; B10-B01B; B10-B04; B10-C02; B10-C04C; **B11-C07B3**; B12-K04; B12-K04E
EPI: S03-E03X; S03-E04D; S03-E14H; S03-E14H1; S03-E14H9
TECH UPTX: 20020916
TECHNOLOGY FOCUS - INSTRUMENTATION AND TESTING - Preferred **sensor** : D and A are each in a **matrix** material, either mixed or in the form of a thin **sensor** film, preferably applied to a transparent substrate or light guide. An optically insulating layer, permeable to analyte, may be placed between the **sensor** layer and the sample being tested. Particularly the **sensor** layer is made of a thin, porous material, with the **matrix** materials for A and D retained in its pores; or the **matrix** for A forms a thin film and that for D is homogeneously dispersed in it. Especially the D-containing phase is formed from particles, and A is bound to the particle surface. For analysis, the **sensor** may be operated as a transducer or enzymatic **sensor.**

TECHNOLOGY FOCUS - ORGANIC CHEMISTRY - Preferred materials: D have high luminescent quantum yield and long decay time (over 100 nsec), e.g. cationic organometallic complexes of rare earth or Group 8B metals with e.g. porphyrins, bipyridines or phenanthrolines. A are standard **indicator dyes**, responsive to pH or ions, particularly of the triphenylmethane or azo types.
TECHNOLOGY FOCUS - **POLYMERS** - Suitable materials for the D phase are non-plastisized polyacrylonitrile, or its derivatives; poly(vinyl chloride) and poly(vinylidene chloride). Typical materials suitable for the A phase are poly(vinyl chloride), polystyrene, polyurethane, optionally containing up to 80% plasticizer.
ABEX UPTX: 20020916
EXAMPLE - A mixture of (i) polyacrylonitrile-poly(ethylene glycol) monomethyl ether **copolymer** (400 mg) and (ii) the donor **dye** ruthenium(II) tris-(4,7-diphenyl-1,10-phenanthroline) (3-trimethylsilyl)-1-propane sulfonate (20 mg) was dissolved in dimethylformamide (80 ml), then the solution treated slowly with water (500 ml) and sodium chloride, then centrifuged. The resulting nanoparticles were washed well with water. A mixture was prepared from the pH-**sensitive** acceptor **dye** N9 (25 mg) and concentrated sulfuric acid (8 drops), then added to water (100 ml) and pH adjusted to 7 with sodium hydroxide. This mixture was treated with the nanoparticles, and after 5 min sodium carbonate (4.2 g) was added, followed after a further 5 min by 5M sodium hydroxide (2 ml). After another 30 min, the pH was adjusted to 3 (hydrochloric acid), the recovered particles washed, and suspended in ethanol. The suspension was mixed with a solution of **polymer** D4 (polyurethane with hydrophilic sequences) and the mixture spread on to polyester film as a 20 micron thick layer. The phase shift (phi) of the donor-acceptor pair was measured as a function of pH; at pH 7.3 it was 49.3degreesC when saturated with air, and 51.3degreesC in absence of **oxygen.**

L141 ANSWER 6 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
AN 2002-050435 [07] WPIX
DNN N2002-037217 DNC C2002-014425
TI Analysis of **gaseous** constituent of samples, e.g. **carbon dioxide** for TOC determination in water, involves transferring the **gas** from a sample receiver via an adapter to an analysis vessel fitted with a pressure equalizer.
DC A89 E19 J04 S03
IN MOELLER, K; NIENDIECK, F; RADMACHER, E; MOLLER, K
PA (MACH-N) MACHEREY NAGEL GMBH & CO HANDELSGES; (MOLL-I) MOLLER K; (NIEN-I) NIENDIECK F; (RADM-I) RADMACHER E; (MACH-N) MACHEREY NAGEL GMBH & CO

CYC 27
PI EP 1146335 A2 20011017 (200207)* GE 8 G01N031-22 <--
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI TR
DE 10018784 A1 20011031 (200207) G01N031-22 <--
US 2001051378 A1 20011213 (200207) G01N031-22 <--
DE 10018784 C2 20020221 (200213) G01N031-22 <--
DE 20121901 U1 20030904 (200360) G01N021-78 <--
US 6740294 B2 20040525 (200435)# G01N007-00
ADT EP 1146335 A2 EP 2001-108716 20010406; DE 10018784 A1 DE 2000-10018784 20000415; US 2001051378 A1 US 2001-835117 20010416; DE 10018784 C2 DE 2000-10018784 20000415; DE 20121901 U1 DE 2001-20121901 20010406, Application no. EP 2001-108716 20010406; US 6740294 B2 US 2001-835117 20010416
PRAI DE 2000-10018784 20000415
IC ICM G01N007-00; **G01N021-78**; **G01N031-22**
ICS G01N021-00; G01N021-31; G01N027-00; **G01N031-00**; G01N033-00
AB EP 1146335 A UPAB: 20020130
NOVELTY - **Gaseous** constituents of a sample are analyzed by transferring the constituent from a sample receiver via an adapter into an analysis vessel containing an **indicator** reagent and connected to the external atmosphere in such a way as to equalize the pressure.

DETAILED DESCRIPTION - A method for the analysis of a **gaseous** or vaporizable constituent (23) of a sample (5), in which the sample (5) is filled into a sample receiver (2) through an inlet (4), an analysis vessel (7) containing an **indicator** reagent (8) is attached to inlet (4) via an adapter (10) and the constituent (23) is transferred from receiver (2) to vessel (7). In this system, vessel (7) is connected to the external atmosphere in such a way as to equalize the pressure. An INDEPENDENT CLAIM is also included for a test kit for such analysis, comprising the above components, in which the analysis vessel (7) can be used as sample container in an optical measuring instrument and is also fitted with a pressure-release device (13).

USE - For the analysis of **gaseous** or vaporizable constituents of a sample, especially e.g. for the determination of total organic carbon in water analysis.

ADVANTAGE - Enables the rapid, quantitative and low-cost analysis of **gaseous** or vaporisable constituents of samples using an **indicator** which gives an intense visible end-point. The test kit based on this method provides for the absorption of a **gaseous** analyte driven out of the sample within a closed system comprising two glass cuvettes, a **gas**-tight adapter and a pressure-equalisation device; this eliminates the possibility of error due to the ingress of air (affecting e.g. the determination of total organic carbon) and prevents adverse effects on **gas** exchange and end-point intensity due to the build-up of a counter-pressure.

DESCRIPTION OF DRAWING(S) - The drawing shows a combination of sample receiver and analysis vessel, connected by an adapter and placed in a heating block, with an enlarged sectional view of the adapter.
Heating block 1
Sample receiver 2
Threaded neck of vessel 3, 9
Water sample 5
Analysis vessel 7
Liquid **indicator** 8
Plastic adapter 10
Hydrophobic separating membrane 12
Analyte (e.g. **carbon dioxide**) 23
Carrier **gas** (e.g. **oxygen** and water vapor) 24
Dwg.6/8
FS CPI EPI
FA AB; GI; DCN
MC CPI: **A12-L04B**; E11-Q03; E31-N05C; J04-C02; J04-C03

EPI: S03-E09E

TECH UPTX: 20020130

TECHNOLOGY FOCUS - INSTRUMENTATION AND TESTING - Preferred Method: The system is connected to the atmosphere (for pressure equalization) by piercing vessel (7) with a ventilation tube (21), but only after the adapter (10) is attached to (7). After filling with the sample, any constituents not required for analysis are removed by heating receiver (2), preferably after adding a suitable expulsion reagent to (2). Preferred Test Kit: The pressure-release device (13) is at the opposite end of vessel (7) from the inlet (4) and is only pervious to **gases** . Device (13) may be in the form of an opening (15, 14) in the vessel which is sealed with a semipermeable or perforable barrier (17 or 16 respectively). The pressure-release device incorporates a vent needle (21) which is used to pierce the barrier (16). The barrier (17, 18) has a removable or strippable protective element (20) on the outside, preferably consisting of a protective film attached with adhesive. The adapter (10) is fitted with a **gas**-permeable separating membrane (12), preferably consisting of hydrophobic material.

TECHNOLOGY FOCUS - **POLYMERS** - Preferred Materials: Semi-permeable barriers (17) consist of hydrophobic material, especially in the form of membranes, e.g. of PTFE, PVDF or FEP **copolymer.** Perforable barriers (16) are also in the form of membranes, preferably made of rubber, especially butyl rubber, preferably **coated** with PTFE or FEP.

ABEX UPTX: 20020130

EXAMPLE - A receiver (2) is filled with a water sample (5) containing an acid mixture (e.g. sodium hydrogen sulfate), heated in a thermo-block for 15 minutes at 70degreesC to drive off inorganic carbon and removed from the block. An oxidizing agent (e.g. perdisulfate) is then added and the receiver is attached to an analysis vessel (7) with a **gas**-tight adapter using the threaded necks on the vessels. The other end of the analysis vessel is sealed with a membrane which is impermeable to liquid but permeable to the carrier **gas** (**oxygen** and water vapor) formed by the oxidizing agent. This carrier **gas** assists the transfer of **carbon dioxide** from vessel (2) to vessel (7) in which the determination of total organic carbon is performed with the aid of a liquid **indicator.**

L141 ANSWER 7 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
AN 2001-616075 [71] WPIX
DNC C2001-184337
TI Sample container assembly for use in optical detection system comprises container, and closure.
DC A17 A92 D16 E12 E13
IN GENTLE, T M; SULLIVAN, T M; TICE, G; **YEH, M**
PA (**BECT**) **BECTON DICKINSON & CO**
CYC 22
PI WO 2001057179 A1 20010809 (200171)* EN 24 C12M001-24
RW: AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR
W: JP
EP 1165746 A1 20020102 (200209) EN C12M001-24
R: AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE TR
US 6432697 B1 20020813 (200255) C12M001-24
JP 2003521918 W 20030722 (200350) 22 C12M001-34
ADT WO 2001057179 A1 WO 2001-US3377 20010202; EP 1165746 A1 EP 2001-908788 20010202, WO 2001-US3377 20010202; US 6432697 B1 US 2000-496775 20000203; JP 2003521918 W JP 2001-557996 20010202, WO 2001-US3377 20010202
FDT EP 1165746 A1 Based on WO 2001057179; JP 2003521918 W Based on WO 2001057179
PRAI US 2000-496775 20000203
IC ICM C12M001-24; C12M001-34
AB WO 200157179 A UPAB: 20011203

NOVELTY - A sample container assembly comprising a container (10) having a sidewall, a bottom wall (16), an open top end (18), and a liquid sample and a closure (22) coupled to the open end of the container. The container is formed from a cyclic olefin **copolymer** having a transparency sufficient to visually observe turbidity in the sample.

DETAILED DESCRIPTION - A sample container assembly comprising a container having a sidewall, a bottom wall, an open top end, and a liquid sample; and a closure coupled to the open end of the container. The container is formed from a cyclic olefin **copolymer** having a transparency sufficient to visually observe turbidity in the sample. The sample is free of contamination after storage in the assembly for an extended period of time under ambient conditions.

USE - The assembly is used in an optical detection system, particularly for detecting the presence of microorganisms by **fluorescence** analysis.

ADVANTAGE - The assembly is non-breakable, optically clear to allow visual detection of a **fluorescent** compound by ultraviolet light and visual inspection of a microorganism growth medium. It is heat resistant, and can withstand an internal pressure of 25 psi without rupturing or distortion. It is also non-reactive with a liquid microorganism growth media.

DESCRIPTION OF DRAWING(S) - The figure shows an exploded side elevational view of the container.

Container 10
Bottom wall 16
Open top end 18
Closure 22
Dwg.1/2

FS CPI
FA AB; GI; DCN
MC CPI: A04-G01E; A12-L04; A12-W11L; D05-H04; E05-M
TECH UPTX: 20011203

TECHNOLOGY FOCUS - INSTRUMENTATION AND TESTING - Preferred Device: The extended period of time is at least 1 year at 40 degreesC. The container has a wall thickness sufficient to withstand an internal pressure of at least 25 psi, and is able to withstand autoclaving at least 250 degreesF without increasing brittleness of the container. The device further comprises a **fluorescent sensor** compound fixed to an inner surface of the container that when exposed to **oxygen** exhibits a reduction in **fluorescent** intensity upon exposure to a **fluorescing** light.

TECHNOLOGY FOCUS - BIOLOGY - Preferred Component: The sample is a microorganism growth medium.

TECHNOLOGY FOCUS - ORGANIC CHEMISTRY - Preferred Components: The **fluorescent** compound is tris-4,7-diphenyl-1,10-phenanthroline ruthenium (II) salts, tris-2,2'-bipyridyl ruthenium (II) salts, and/or 9,10-diphenyl anthracene, particularly tris-4,7-diphenyl-1,10-phenanthroline ruthenium (II) chloride, or tris-2,2'-bipyridyl ruthenium (II) chloride hexahydrate.

TECHNOLOGY FOCUS - **POLYMERS** - Preferred Components: The cyclic olefin **copolymer** is a **copolymer** of a cyclic olefin and ethylene or a **copolymer** of formula (I).
R1, R5 = H, or 1-8C alkyl.

L141 ANSWER 8 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
AN 2001-138389 [14] WPIX
DNN N2001-100688 DNC C2001-040874
TI A **colorimetric** device, used as part of an endotracheal intubation apparatus, comprises a silicone oligomer or **polymer.**
DC A26 A89 B04 E19 E36 J04 S03

IN ALBADRAN, J; MCMURRAY, N H
PA (SENS-N) SENSORMETRIX INT LTD
CYC 94
PI WO 2001004624 A1 20010118 (200114)* EN 17 G01N031-22 <--
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TZ UG ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
AU 2000056921 A 20010130 (200127) G01N031-22 <--
ADT WO 2001004624 A1 WO 2000-GB2431 20000706; AU 2000056921 A AU 2000-56921 20000706
FDT AU 2000056921 A Based on WO 2001004624
PRAI GB 1999-16236 19990710
IC ICM **G01N031-22**
ICS G01N033-00
AB WO 200104624 A UPAB: 20010323
NOVELTY - A **colorimetric** device (I) which includes a silicone oligomer or **polymer**, is new.
DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:
(1) detecting **CO2** comprising placing (I) in situ and observing **color** change;
(2) a medical device including (I);
(3) determining the proper placement of an endotracheal tube which comprises inserting (I) into the trachea of a patient and observing a **color** change;
(4) the use of an organic solvent soluble, substantially non-curable, hydrophobic silicone oligomer or **polymer** in the manufacture of (I); and
(5) a film formulation comprising at least 1 pH **sensitive dye** and an organic solvent soluble, substantially non-curable, hydrophobic silicone oligomer or **polymer.**
USE - (I) is used as a **CO2 indicator.**
ADVANTAGE - (I) does not need to be hermetically sealed and the reaction on the film is reversible.
Dwg.0/0
FS CPI EPI
FA AB; DCN
MC CPI: A06-A00E3; **A12-L04B**; A12-V03D; B04-C03D; B05-C05; B11-C04; B11-C07B1; B11-C08C; B12-K04A; E10-A01; E10-A22G; E11-Q03L; E31-N05C; J04-B01
EPI: S03-E09E
TECH UPTX: 20010323
TECHNOLOGY FOCUS - **POLYMERS** - Preferred Materials: The silicon oligomer or **polymer** is an organic solvent soluble, substantially non-curable, hydrophobic silicone oligomer or **polymer.** (I) comprises a pH **sensitive dye.** The silicone oligomer or **polymer** has an **oxygen** permeability of at most 150000 cm3/24 hours and a **carbon dioxide** permeability of at most 750000 cm3/24 hours. The silicone oligomers or **polymers** are substantially linear, are free of hydrophilic groups and have methyl substituents, ethyl or trifluoromethyl substituents. The silicone oligomers or **polymers** are linear **polydimethylsiloxanes** with a molecular weight of 200-200000. The silicone is optically transparent and substantially free of migrating low molecular weight materials. (I) includes a phase transport enhancer of the general formula R2-X+(R1)(R3)-Y-(F1):
X = N-R4, P-R4 or S;
R1-R3 = 1-18C-alkyl or aralkyl, or two of R1-R3 together complete an optionally substituted heterocyclic group containing up to 20C atoms;
R4 = 13-17C-alkyl;

Y = an anion selected from halide, carbonate and tetra fluoroborate

TECHNOLOGY FOCUS - ORGANIC CHEMISTRY - Preferred Enhancer: The phase transport enhancer is a symmetrical 13-17C ammonium salt. The asymmetric 18C ammonium salt is tripentyl-octadecyl ammonium. The phase transport enhancer is a benzalkonium salt.

TECHNOLOGY FOCUS - INSTRUMENTATION AND TESTING - Preferred Device: (I) is a **CO2** detector. The medical device comprising (I) is an endotracheal intubation apparatus.

L141 ANSWER 9 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
AN 2000-441516 [38] WPIX
DNC C2000-134046
TI New apparatus for detecting microorganism growth using culture medium in a container, a chemically **sensitive** material, a first material exhibiting **fluorescence** decay and a second material exhibiting an optical transmission.
DC B04 D16
IN BERNDT, K W
PA (**BECT**) **BECTON DICKINSON & CO**
CYC 1
PI US 6080574 A 20000627 (200038)* 15 C12M001-34
ADT US 6080574 A Cont of US 1994-244228 19940510, CIP of US 1996-617966 19960311, US 1999-262520 19990304
PRAI US 1999-262520 19990304; US 1994-244228 19940510; US 1996-617966 19960311
IC ICM C12M001-34
AB US 6080574 A UPAB: 20000811
NOVELTY - An apparatus for detecting microorganism growth comprises a chemically **sensitive** material, a first material exhibiting **fluorescence** decay and a second material exhibiting an optical transmission.

DETAILED DESCRIPTION - An apparatus (I) for detecting microorganism growth comprises:

(a) a container comprising a culture medium, a blood specimen and a headspace having a concentration of a **gas**;

(b) a chemically **sensitive** material in the container for detecting microorganism growth within the container when illuminated with an intensity modulated light comprising a first and second material, where the first material exhibits a **fluorescence** decay time and **fluorescence** intensity that depend on a first chemical parameter of the **gas** and the second material exhibits an optical transmission that depends on a second chemical parameter of the **gas.**

USE - The method and the apparatus is useful for identifying microorganisms in blood (claimed).

ADVANTAGE - The method and apparatus is useful for reliably and non-invasively detecting biological activities in blood culture vials that do not have the **fluorescence** intensity limitations.

DESCRIPTION OF DRAWING(S) - The diagram illustrates a composite optical blood culture **sensor.**

Container; 1
cap; 2
Sensor materials; 3
Culture medium; 4
Light Source; 5
Signal Source; 7
Computer. 12
Dwg.0/14

FS CPI
FA AB; DCN
MC CPI: B04-B04D5; B04-F09; B04-F10; B04-F11; B05-A03B; B05-C04; B05-C08;

B06-C; B06-D15; B10-A01; B10-A16; **B11-C07B3**; B12-K04A4; D05-H02; D05-H04

TECH UPTX: 20000811

TECHNOLOGY FOCUS - BIOTECHNOLOGY - Preferred Apparatus: The first chemical parameter of the **gas** is **oxygen** concentration so that the first material exhibits a change in **fluorescence** decay time and **fluorescence** intensity in response to the change in **oxygen** concentration of the **gas**. The first material is a **fluorophore**. The second chemical parameter of the **gas** is **carbon dioxide** concentration so that the second material exhibits a change in optical transmission in response to the change in **carbon dioxide** concentration of the **gas**. The second material is a **chromophore**.

TECHNOLOGY FOCUS - ORGANIC CHEMISTRY - Preferred Apparatus: The **fluorophore** is tris-4,7-diphenyl-1,10-phenanthroline ruthenium (II) chloride and the second chemical parameter of the **gas** is **carbon dioxide** concentration so that the second material exhibits a change in optical transmission in response to the change in **carbon dioxide** concentration of the **gas**. The second material is a **chromophore** (especially bromocreosol purple, m-creosol purple, nitrazine yellow, chlorophenol red or bromomethyl blue). The second material exhibits a change in optical transmission within the excitation wavelength range or within the emission wavelength range of the first material in response to the change in **carbon dioxide** concentration of the **gas**. The apparatus further comprises a light source for illuminating the chemically **sensitive** material in the container with excitation light that is intensity modulated at a predetermined circular modulation frequency with a predetermined modulation degree, a photodetector for detecting **fluorescence** light reemerging from the chemically **sensitive** material, a means for measuring an AC component and a DC component of the **fluorescence** photocurrent from the photodetector and a means for generating **sensor** output signal based on the AC component and the DC component representing information as to whether or not microorganism growth is present within the container. The apparatus also further comprises means for compiling a first set of signals corresponding to the **fluorescence** decay time and **fluorescence** intensity depending on the first chemical parameter of the **gas**, a means for compiling a second set of signals corresponding to the **fluorescence** decay time and **fluorescence** intensity depending on the second chemical parameter of the **gas** and a means for comparing the first and second sets of signals with corresponding predetermined data base of first and second sets of signals for known microorganisms to perform microorganism identification on a detected microorganism.

L141 ANSWER 10 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
AN 2000-302286 [26] WPIX
DNN N2000-225817 DNC C2000-091553
TI New 3H-fluoren-3-ylidene derivatives e.g. useful for making biomedical **sensors** or electro-optic devices.
DC A14 B04 E14 E24 J04 L03 P81 S03 V07
IN GOETZ, F J
PA (GOET-I) GOETZ F J
CYC 1
PI US 6041157 A 20000321 (200026)* 33 G02B006-00
ADT US 6041157 A Provisional US 1996-32280P 19961203, US 1997-980446 19971128
PRAI US 1996-32280P 19961203; US 1997-980446 19971128
IC ICM G02B006-00
ICS G02B005-23
AB US 6041157 A UPAB: 20000531
NOVELTY - 3H-Fluoren-3-ylidene derivatives (I) are new.
DETAILED DESCRIPTION - 3H-Fluoren-3-ylidene derivatives of formula

(I) and their bipolar tautomers are new:
X = D or A;
D = J; D1=Z-; or D2=C- in which the C atom is part of an aromatic or heteroaromatic ring system optionally substituted by one or more J groups and/or one or more R1, R2, GR3, GQ, GT, GY, GR asterisk , Q, T, Y or R asterisk groups;
D1, D2 = substituted or unsubstituted unsaturated heterocyclic organic ring systems having one to (a-1) members being at least one electron donating heteroatom having one or two lone electron pairs being bonded to a carbon or to a heteroatom of the ring system and being J or L;
Z, Z1, Z2 = N, P, As, Sb or Bi, or C, Si or Ge optionally substituted by J, L, R1, R2, GR, Q, T, Y or R asterisk ;
A = L;
L, L1 = CN, NO, NO2, COJ2, C(J2)=NJ3, P(O)J2J3, P(O)(J2)(NJ3J4), SO2J2, S(O)(NJ2)J3, S(NJ2)(NJ3)J4, SOJ2 or Z'=Z-J2; J = R, R1, R2, R3, (CH2)nR1, SR1, OR1, NR1R2, GR1, (CH2)nGR1, SGR1, OGR1, N(GR1)(GR2), OOR1, OOGR1, SSR1 or SSGR1;
J1-J4 = (CH2)nR1, SR1, OR1 or NR1R2;
L2 = =CA1A2 or =Z(A)Q(q-1);
L3, L4 = C(R)=CA1A2;
A1, A2 = L or together form a ring system optionally substituted by J, L, R1, R2, GR, Q, T, Y or R asterisk ;
R = J, L, R1, R2, GR, Q, T, Y or R asterisk ;
G = (CH=CH)x, (CH2)w, 6-16C arylene or 5- to 14-membered heteroarylene (containing N, P, O, S, Se or Te), all optionally substituted by J1 or L1;
x = 1-10;
w = 1-22;
R1, R2 = H, halogen, Q, T, Y, 1-22C alkyl, or 6-16C aryl or 5- to 14-membered heteroaryl (containing N, P, O, S, Se or Te) optionally substituted by J1 or L1;
R3 = H, halogen, Q, T, Y, 1-22C alkyl or 3-22C cycloalkyl;
R asterisk = a reactive group;
Q = A, D, an electron lone pair or T;
T = a **polymerizable** group
Y = a **polymerization**-initiating group
M, M1 = J, L, R1, R2, Q, T, Y, GR, GQ, GT, GR asterisk , GY or GR; or M+M forms a 6-46C carbocyclic or 2-32C heterocyclic ring system fused to positions 7 and 8; or M1+M1 forms a 6-46C carbocyclic or 2-32C heterocyclic ring system fused to positions 1 and 2;
R = a group of formula (I) minus M or M1;
m, n = 0-3.
An INDEPENDENT CLAIM is also included for concatenated analogs of formula (II)-(IV):
o, p = 1-1,000,000.
USE - (I) are substances that (a) undergo changes in their optical properties in response to environmental changes, (b) undergo permanent changes in refraction on exposure to radiation and (c) in some cases, possess strong luminescence, absorption and refraction in the near infrared. They can be fabricated into optical devices and circuits, e.g. biomedical **sensors** such as glucose **sensors**, by photoprocessing; can be used with implants for determining medical information, e.g. blood and tissue levels of glucose, electrolytes, heavy metals, **carbon dioxide**, **oxygen**, antibodies, acidity and/or alkalinity; and can be used to make electro-optic devices, e.g. optical integrated circuits, modulators, switches or transmitters.
Dwg.0/0

FS CPI EPI GMPI
FA AB; GI; DCN
MC CPI: A04-F11; B05-A02; B05-B01A; B05-B01B; B05-B01C; B05-B01E; B05-B01F; B05-B02C; B08-D03; E05-E01; E05-F02; E05-G02; E05-H; E05-J; E05-K; E08-D03; **E25-E03**; J04-B01; L03-D01D
EPI: S03-E03C1; **S03-E04E**; S03-E14H1; S03-E14H6; V07-K10B2

TECH UPTX: 20000531

TECHNOLOGY FOCUS - ORGANIC CHEMISTRY - (I) can be prepared e.g. by reacting compounds of formula (V) with a strong acid in the presence of a dehydrating agent and reacting the resulting carbonium ion with -ZQq:

ABEX UPTX: 20000531

SPECIFIC COMPOUNDS - None given.

DEFINITIONS - Full Definitions:

X = D or A;

D = J; D1=Z-; or D2=C- in which the C atom is part of an aromatic or heteroaromatic ring system optionally substituted by one or more J groups and/or one or more R1, R2, GR3, GQ, GT, GY, GRasterisk, Q, T, Y or Rasterisk groups;

D1, D2 = substituted or unsubstituted unsaturated heterocyclic organic ring systems having one to (a-1) members being at least one electron donating heteroatom having one or two lone electron pairs being bonded to a carbon or to a heteroatom of the ring system and being J or L;

Z, Z1, Z2 = N, P, As, Sb or Bi, or C, Si or Ge optionally substituted by J, L, R1, R2, GR, Q, T, Y or Rasterisk;

A = L;

L, L1 = CN, NO, NO2, COJ2, C(J2)=NJ3, P(O)J2J3, P(O)(J2)(NJ3J4), SO2J2, S(O)(NJ2)J3, S(NJ2)(NJ3)J4, SOJ2 or Z'=Z-J2; J = R, R1, R2, R3, (CH2)nR1, SR1, OR1, NR1R2, GR1, (CH2)nGR1, SGR1, OGR1, N(GR1)(GR2), OOR1, OOGR1, SSR1 or SSGR1;

J1-J4 = (CH2)nR1, SR1, OR1 or NR1R2;

L2 = =CA1A2 or =Z(A)Q(q-1);

L3, L4 = C(R)=CA1A2;

A1, A2 = L or together form a ring system optionally substituted by J, L, R1, R2, GR, Q, T, Y or Rasterisk;

R = J, L, R1, R2, GR, Q, T, Y or Rasterisk;

G = (CH=CH)x, (CH2)w, 6-16C arylene or 5- to 14-membered heteroarylene (containing N, P, O, S, Se or Te), all optionally substituted by J1 or L1;

x = 1-10;

w = 1-22;

R1, R2 = H, halogen, Q, T, Y, 1-22C alkyl, or 6-16C aryl or 5- to 14-membered heteroaryl (containing N, P, O, S, Se or Te) optionally substituted by J1 or L1;

R3 = H, halogen, Q, T, Y, 1-22C alkyl or 3-22C cycloalkyl;

Rasterisk = a 1-2C carbonyl halide, 0-20C sulfonyl halide, 0-20C phosphoryl halide, 1-21C imidoyl halide, 1-31C alkyl halide, 1-31C alpha-haloester, 1-31C alpha-haloketone, 1-21C heterocyclyl halide or 2-32C cycloalkyl halide group or a reactive unsaturated group, e.g. an isocyanate, isothiocyanate, ketene, olefin, acetylene, allene, ketone, alpha,beta-dione, alpha,beta,gamma-trione, imine, alpha,beta-diimine, azide, carbodiimide, unsaturated ketone, ester, sulfone, sulfonamide or sulfonate group, a group comprising carbon double-bonded to a heteratom, a 1-21C alcohol, 1-21C carboxylic acid, 0-20C sulfonic acid, 1-21C carboxamide, 0-20C sulfonamide, 1-30C amine, 6-36C aryl, 1-22C heteroaryl, 0-21C mercaptan or phosphate group, or an alkali metal, alkaline earth metal, transition metal or B-group metal;

Q = A, D, an electron lone pair or T;

T = a **polymerizable** 4-26C alpha,beta-unsaturated carbonyl, 3-25C vinyl ether, 2-23C carboxylic acid, 3-45C ester, 1-22C alcohol, 1-22C isocyanate, 1-22C isothiocyanate, 1-44C amine or 2-44C 1-substituted or 1,1-disubstituted alkylene group, or a **polymerizable** 1-44C group containing a 0-22C nucleophilically replaceable group, all optionally substituted by GY, GQ and GRasterisk;

Y = a **polymerization**-initiating group selected from 2-22C alpha,beta-diones, 1-21C azoalkanes, 1-21C alkyl peroxides, 0-20C hydroperoxides, 1-21C peroxide esters, 0-20C persulfonates, 0-20C alpha,beta-disulfones, 1-21C esters, 1-21C ethers, 1-21C alcohols, 1-41C amines, 0-20C sulfonic acids, 1-21C carboxamides, CHA1A2, 3-23C substituted cyclopropanes, 4-24C substituted cyclobutanes, 1-31C

substituted iodonium groups and 2-42C substituted sulfonium groups, the substituents being J, L, R1, R2, GR, GQ, GT, GRasterisk, Q, T or Rasterisk;
M, M1 = J, L, R1, R2, Q, T, Y, GR, GQ, GT, GRasterisk, GY or GR; or M+M forms a 6-46C carbocyclic or 2-32C heterocyclic ring system fused to positions 7 and 8; or M1+M1 forms a 6-46C carbocyclic or 2-32C heterocyclic ring system fused to positions 1 and 2;
R = a group of formula (I) minus M or M1;
m, n = 0-3.

L141 ANSWER 11 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
AN 2000-064290 [06] WPIX
DNC C2000-018025
TI Homogeneous composition for detecting growth of **respiring** microorganisms in sample comprising tris(4,7-diphenyl-10-phenanthroline)ruthenium dichloride pentahydrate.
DC A26 A96 B04 D16 J04
IN GENTLE, T M; **YEH, M**
PA (**BECT**) **BECTON DICKINSON & CO**
CYC 28
PI EP 962535 A1 19991208 (200006)* EN 11 C12Q001-04
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI
US 5998517 A 19991207 (200006) C08K005-34
JP 2000004898 A 20000111 (200013) 8 C12Q001-04
CA 2272043 A1 19991205 (200021) EN C12Q001-04
EP 962535 B1 20030827 (200358) EN C12Q001-04
R: DE FR GB IT
DE 69910667 E 20031002 (200372) C12Q001-04
ADT EP 962535 A1 EP 1999-109191 19990510; US 5998517 A US 1998-92689 19980605; JP 2000004898 A JP 1999-160156 19990607; CA 2272043 A1 CA 1999-2272043 19990513; EP 962535 B1 EP 1999-109191 19990510; DE 69910667 E DE 1999-610667 19990510, EP 1999-109191 19990510
FDT DE 69910667 E Based on EP 962535
PRAI US 1998-92689 19980605
IC ICM C08K005-34; C12Q001-04
ICS C09B057-10; C12M001-34
AB EP 962535 A UPAB: 20000203
NOVELTY - Homogeneous composition for detecting growth of **respiring** microorganisms in a sample comprises:
(a) tris(4,7-diphenyl-10-phenanthroline)ruthenium dichloride pentahydrate (I) ;
(b) a hydroxy containing organic or silicone compound;
(c) an organosilicon **polymer**;
(d) an organohydrogensilicon compound;
(e) a **catalyst**; and
(f) a filler.
DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for:
(1) composition for detecting growth of **respiring** microorganisms in a sample comprising (I) dissolved in a silicone **polymer** with a silanol functional group incorporated into a liquid silicone **polymer**;
(2) preparation of a composition for detecting growth of **respiring** microorganisms in a sample comprising:
(i) forming a solution of (I) and a hydroxyl-functional group;
(ii) adding an organosilicon **polymer**;
(iii) adding an organohydrogensilicon compound in the presence of a **catalyst**, forming an elastomer; and
(iv) adding filler.
USE - Detecting growth of **respiring** microorganisms in a sample (claimed) by changing **fluorescence** intensity according to **oxygen** concentration.
ADVANTAGE - The composition allows direct addition of (I) to a liquid

silicone **polymer** and does not require its deposition on a solid surface, so is homogeneous.
Dwg.0/0
FS CPI
FA AB; DCN
MC CPI: A06-A00A; A06-A00E; A08-R01; A10-D; A12-L04; A12-W11L; B04-C03B; B04-C03D; B05-A03B; B11-C09; B12-K04; D05-H04; D05-H05; D05-H06; J04-B01
TECH UPTX: 20000203
TECHNOLOGY FOCUS - INORGANIC CHEMISTRY - Preferred Composition: The composition also comprises an acid to maintain the pH at 7.

TECHNOLOGY FOCUS - **POLYMERS** - Preferred Composition: The hydroxy-containing compound is especially a silicone is of formula (I).
R = 1-12C hydrocarbon;
X = OH or R1;
n = 1 or 2;
m = a number to give a viscosity of 1-500 mPas at 25 degreesC;
R1 = 1-20C optionally substituted unsaturated aliphatic hydrocarbon.
ABEX UPTX: 20000203
EXAMPLE - Tris(4,7-diphenyl-10-phenanthroline)ruthenium dichloride pentahydrate was dissolved in Si2O5, then added to silicone to form a **sensor.** Performance of this **sensor** is given in a table in the specification, but the results are not explained.

L141 ANSWER 12 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
AN 2000-038654 [03] WPIX
DNN N2000-029175 DNC C2000-009875
TI Measuring **carbon dioxide**, **oxygen**, etc. in water, carbonated beverage, sparkling wine, beer, blood, etc..
DC A14 A96 B04 D13 D15 D16 J04 S03
IN GOTTLIEB, A J
PA (GOTT-I) GOTTLIEB A J
CYC 20
PI WO 9956109 A1 19991104 (200003)* EN 29 G01N021-63
RW: AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE
W: JP US
ADT WO 9956109 A1 WO 1999-US9168 19990427
PRAI US 1998-83179P 19980427
IC ICM G01N021-63
AB WO 9956109 A UPAB: 20000118
NOVELTY - A fluid mixture contacts and partly dissolves a **copolymer** exposed to light of preset wavelength characteristic. Measuring the light exiting from the particle **indicates** the presence of a selected chemical species in the mixture.
DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for an analytical apparatus. Preferred Features: Light from source (301) is directed along a waveguide (302), through the chamber (303) and along another waveguide (304) to a **sensor** (305). The chamber is optical fiber(s) made from the **copolymer** whose cladding has a lower refractive index than its core.
USE - For detecting **carbon dioxide**, **oxygen**, etc. in water, carbonated beverages, sparkling wine, beer, blood, etc.
ADVANTAGE - The detector is reliable and stable over long periods.
Dwg.3/10
FS CPI EPI
FA AB; GI; DCN
MC CPI: **A12-L04B**; A12-V03C2; B04-B04D5; B05-C04; B05-C08; B11-C08; B11-C09; B12-K04A; D03-K03; D05-H09; J04-B01A
EPI: S03-E04D; **S03-E04E**; S03-E09E; S03-E13B; S03-E14A; S03-E14B; S03-E14H1
TECH UPTX: 20000118

TECHNOLOGY FOCUS - **POLYMERS** - The **copolymer** is made from perfluoro (2,2-dimethyl 1,3-dioxole) and a perhalogenated monomer(s), preferably tetrafluoroethylene, chlorotrifluoroethylene or perfluoro(methylvinyl) ether. The composition of the optical fiber core may be at least 65 mole % and the cladding at least 90 mole % of the perfluoro compound.

L141 ANSWER 13 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
AN 1999-469152 [39] WPIX
DNN N1999-350299 DNC C1999-137680
TI Optical **sensor** comprising detection layer that includes luminescent and reflective materials, for analysis of **gases** and ions in e.g. blood.
DC A60 A89 B04 J04 S02 S03
IN BARNARD, S M; COLLINS, T C; CUDMORE, S L; MASON, R W; MUNKHOLM, C; SLOVACEK, R E; SULLIVAN, K J
PA (FARB) BAYER CORP; (BARN-I) BARNARD S M; (COLL-I) COLLINS T C; (CUDM-I) CUDMORE S L; (MASO-I) MASON R W; (MUNK-I) MUNKHOLM C; (SLOV-I) SLOVACEK R E; (SULL-I) SULLIVAN K J
CYC 85
PI WO 9937997 A1 19990729 (199939)* EN 48 G01N021-64 <--
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SZ UG ZW
W: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG US UZ VN YU ZW
AU 9917779 A 19990809 (200001) G01N021-64 <--
EP 1051607 A1 20001115 (200059) EN G01N021-64 <--
R: AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE
US 6254831 B1 20010703 (200140) G01N021-64 <--
US 2001012539 A1 20010809 (200147) B05D005-12
JP 2002501191 W 20020115 (200207) 49 G01N021-64 <--
ADT WO 9937997 A1 WO 1999-IB47 19990118; AU 9917779 A AU 1999-17779 19990118; EP 1051607 A1 EP 1999-900082 19990118, WO 1999-IB47 19990118; US 6254831 B1 US 1998-9917 19980121; US 2001012539 A1 Div ex US 1998-9917 19980121, US 2001-823734 20010330; JP 2002501191 W WO 1999-IB47 19990118, JP 2000-528856 19990118
FDT AU 9917779 A Based on WO 9937997; EP 1051607 A1 Based on WO 9937997; US 2001012539 A1 Div ex US 6254831; JP 2002501191 W Based on WO 9937997
PRAI US 1998-9917 19980121; US 2001-823734 20010330
IC ICM B05D005-12; **G01N021-64**
ICS G01N021-76
AB WO 9937997 A UPAB: 19990928
NOVELTY - Optical **sensor** (A) comprises a support and a detection layer (DL) comprising:
(i) a luminescent material (I) for which the luminescent intensity depends on the amount of an analyte present;
(ii) material (II) that reflects very efficiently the wavelengths of excitation of, and emission from, (I); and
(iii) a **polymeric** binder (III).
DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a method for producing (A).
USE - The optical **sensors** are used to determine **gases** (particularly **oxygen**, **carbon dioxide** and ammonia) or (non)ionic analytes (e.g. physiologically important metal ions, charged forms of lactate, creatinine and urea) in highly scattering samples, particularly blood.
ADVANTAGE - (II) overcomes optical interference associated with absorption, scattering and reflection of excited and/or emitted light, i.e. it acts as an internal light barrier and particularly increases the emission signal by reflecting excitation light, that would otherwise be transmitted back into (I). It eliminates the need for additional

coating layers.
Dwg.0/11
FS CPI EPI
FA AB; DCN
MC CPI: A12-L04; B04-B04D5; B04-C02A; B04-C03B; B04-C03D; B05-A01B; B05-A02; B05-A03A; B05-A03B; B05-C01; B05-C04; B05-C08; B06-D18; B11-C07B2; B11-C07B4; B12-K04A; B12-K04E; J04-C04
EPI: S02-K02D; S03-E04D; S03-E14H1
TECH UPTX: 19990928
TECHNOLOGY FOCUS - INSTRUMENTATION AND TESTING - Preferred **sensor** : DL is 0.2-10 (especially 1-8) microm thick and contains 5-65 (particularly 30-50) wt.% (II), particularly a pigment (inorganic and/or a blush **polymer** pigment). The (I) content is 0.01-3 wt.%. DL is the outermost layer, in contact with analyte-containing sample, and the support is transparent to wavelengths of excitation and emission, particularly a flexible plastic film but it may also be a glass microscope slide. (A) may have two or more DL in a pattern, capable of measuring different analytes. Optionally DL also includes an agent that increases permeability and improves mechanical integrity and stability. Specifically mentioned (A) are used to detect (1) **oxygen**, with (I) as platinum octaethylporphyrin and (III) as a hydrophobic **copolymer** of ethylhexyl- and methyl methacrylates; (2) **carbon dioxide**, with (II) as an acridine, **fluorescein**, rhodamine or pyrene and (III) as ethyl cellulose; or (3) pH, with (I) as in (2) and (III) as a **copolymer** of N,N-dimethylacrylamide and N-tert-butylacrylamide.
Preferred analytes: The analytes are (i) a **gas**, particularly ammonia, **carbon dioxide** or **oxygen** or (ii) an ionic or nonionic material.
Preparation: The support is **coated** with a liquid mixture which is then allowed to dry to form DL. Preferably DL is heated to above the glass-transition temperature of (III), then cooled to ambient conditions.

TECHNOLOGY FOCUS - INORGANIC CHEMISTRY - The pigments comprise one or more of titanium, zinc, antimony or magnesium oxides, and/or barium sulfate, most preferably titanium dioxide of particle size 0.1-0.5 microm.

TECHNOLOGY FOCUS - ORGANIC CHEMISTRY - (II) is an acridine, **fluorescein**, rhodamine or pyrene, or a phosphorescent material, particularly platinum octaethylporphyrin.

TECHNOLOGY FOCUS - **POLYMERS** - (III) is a polyamide, polyacrylamide, polystyrene, poly(alkyl)acrylate, polynitrile, poly(vinyl chloride or alcohol), polydiene, polyester, polycarbonate, **polysiloxane**, polyurethane, polyolefin, polyimide or their **heteropolymer** combinations, or cellulosics and their derivatives. Most preferred are ethyl cellulose; a **copolymer** of N,N-dimethylacrylamide and N-tert-butylacrylamide, or, where (II) is phosphorescent, a **copolymer** of ethylhexyl- and methyl-methacrylates.
ABEX UPTX: 19990928
EXAMPLE - A mixture of ethylhexyl- and methyl-methacrylate (1:9) **copolymer** (1 g), titanium dioxide (1 g), tetrahydrofuran (10 ml) and ten tungsten carbide beads was milled overnight, then 6 mg platinum octaethylporphyrin added to 3 ml of the mix and stirred vigorously. The mixtures was applied to films of 'Mylar' (RTM for polyester) to a thickness, after drying, of 8 microm. The films were heated at 105degreesC for 1 hour, in a vacuum oven, then cooled to room temperature overnight. When these films were used in an **oxygen sensor**, the plot of luminescent intensity ratio vs. **oxygen** partial pressure was linear over the partial pressure range 40-180 mm for both clear liquid calibrator samples and tonometered blood samples, with points from both sample types on a single line. This shows that the presence of variable

amounts of hemoglobin in the sample did not affect the results. For similar **sensors** lacking titanium dioxide, the plots for blood samples were significantly different from those for calibrators, with the degree of difference depending on the hemoglobin content.

L141 ANSWER 14 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
AN 1999-370143 [31] WPIX
CR 2000-060831 [05]; 2001-280518 [29]; 2001-522464 [57]; 2003-755208 [71]
DNC C1999-109219
TI **Sensor** device useful for detecting microorganisms.
DC A89 A96 B04 D16 J04
IN HYMAN, J M; JEFFREY, S R; MARESCH, M J; MATSUMURA, P M; THORPE, T C
PA (INMR) BIOMERIEUX INC; (ALKU) AKZO NOBEL NV
CYC 24
PI US 5912115 A 19990615 (199931)* 20 C12Q001-00
WO 9929831 A1 19990617 (199931) EN C12M003-00
RW: AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE
W: AU CA FI JP KR US
AU 9917241 A 19990628 (199946) C12M003-00
WO 2000003035 A1 20000120 (200012) EN
RW: AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE
W: CA FI JP KR US
EP 1003836 A1 20000531 (200031) EN C12M003-00
R: AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE
EP 1097240 A1 20010509 (200128) EN C12Q001-00
R: AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE
KR 2000071045 A 20001125 (200131) C12M003-00
JP 2002520028 W 20020709 (200259) 40 C12Q001-24
AU 752954 B 20021003 (200301) C12M003-00
ADT US 5912115 A CIP of US 1997-989560 19971212, US 1998-113929 19980710; WO 9929831 A1 WO 1998-US26376 19981210; AU 9917241 A AU 1999-17241 19981210; WO 2000003035 A1 WO 1999-US15599 19990712; EP 1003836 A1 EP 1998-962077 19981210, WO 1998-US26376 19981210; EP 1097240 A1 EP 1999-933857 19990712, WO 1999-US15599 19990712; KR 2000071045 A WO 1998-US26376 19981210, KR 1999-707313 19990812; JP 2002520028 W WO 1999-US15599 19990712, JP 2000-559255 19990712; AU 752954 B AU 1999-17241 19981210
FDT AU 9917241 A Based on WO 9929831; EP 1003836 A1 Based on WO 9929831; EP 1097240 A1 Based on WO 2000003035; KR 2000071045 A Based on WO 9929831; JP 2002520028 W Based on WO 2000003035; AU 752954 B Previous Publ. AU 9917241, Based on WO 9929831
PRAI US 1998-113929 19980710; US 1997-989560 19971212
IC ICM C12M003-00; C12Q001-00; C12Q001-24
ICS C12M001-00; C12Q001-02; C12Q001-04
AB US 5912115 A UPAB: 20031105
NOVELTY - **Sensor** device (I) for detecting the presence and enumerating microorganisms in a blood sample, is new.

DETAILED DESCRIPTION - (I) comprises a container under vacuum and a test-sample immobilization layer within the container.

INDEPENDENT CLAIMS are also included for the following:

(i) a kit for collecting a blood sample from a patient comprising a needle connected to a direct draw conduit with a piercing mechanism, and a container comprising a microorganism immobilization layer and a **sensor** layer, held under vacuum and with a pierceable wall section; and

(ii) a method or taking a blood sample from a patient and detecting microorganisms in the sample using the kit of (i).

USE - The device is useful for detecting and enumerating microbial activity in a blood sample.

ADVANTAGE - Blood flows directly from the patient into the evacuated device where detection of the microorganisms takes place. Blood may be collected using a standard hospital adapter.

DESCRIPTION OF DRAWING(S) - The diagram shows an illustration of the **sensor** plate device.

Sensor plate 1
Port 2
Stopper 3
Dwg.1/1
FS CPI
FA AB; GI; DCN
MC CPI: **A12-L04B**; A12-V03C2; B04-B04D5; B04-C03; B05-A03; B05-C08; B06-A02; B06-A03; B06-C; B10-C03; B11-C07B1; **B11-C07B3**; B11-C08C; B11-C09; B12-K04A4; D05-H09; J04-B01; J04-C04
TECH UPTX: 19990806
TECHNOLOGY FOCUS - BIOTECHNOLOGY - Preferred **Sensor** Layer: The **sensor** layer undergoes detectable localized changes in response to the presence of microorganism colonies. The layer is opaque and blocks the viewing of the test sample (either by eye of with a detector) from the side of the layer opposite the immobilization layer. The opaque layer changes **color** and/or undergoes a localized change in the ultraviolet, visible, and/or infra red spectrum in the presence of microorganisms. The localized change is detectable through the wall of the container. The **sensor** layer changes in response to changes in a **gas** component due to microorganism metabolism, **oxygen**, hydrogen, hydrogen sulfide, **carbon dioxide**, organic acid, nitrogen dioxide, ammonia, and/or pH. The **sensor** layer optionally comprises an **indicator** that has a change detectable by imaging, **fluorescence** or reflectance and exhibits a change in **fluorescence** intensity or visible **color** over a pH range of 5-11. The layer contains **fluorescein**, coumarin, phenolphthalein, thymolphthalein, bromothymol blue, thymol blue, xylenol blue, ortho cresolphenalein and/or alpha-naphthenol benzein. The layer comprises a pigment, preferably a metal oxide pigment and especially titanium oxide, zinc oxide, magnesium oxide or iron oxide.
Preferred Immobilization Layer: The immobilization layer is an absorbent material, preferably filter paper, a sponge, glass fiber or cellulose and further comprises a gelling agent, preferably a solid gel (optionally dehydrated), a semi-solid gel (optionally dehydrated), or a **powdered** gel. The gelling agent is a gum, agar, agarose, carageenan, bentonite, alginate, collagens, gelatin, fused silicate, water soluble starch, polyacrylate, cellulose, cellulose derivative, polyethylene glycol, polyethylene, oxide, polyvinyl alcohol, dextran, polyacrylamide, and/or polysaccharide. The immobilization layer preferably comprises an upper layer that traps microorganisms and a lower layer that acts as a wick and draws the liquid sample through the upper layer. The layer contains growth components, facilitating the growth of microorganisms. The layer optionally comprises lytic agents, lytic enzymes, surfactants and/or components to neutralize growth inhibitors. The lytic agent is preferably saponin, digitonin, Tween (RTM), or polysorbitan monolaurate and the growth inhibitor neutralizing factor is resin, ecosorb, and/or activated charcoal.

TECHNOLOGY FOCUS - **POLYMERS** - Preferred **Sensor** Layer: The **sensor** layer optionally comprises a **polymeric** material and is preferably silicone.
Preferred Immobilization Layer: The immobilization layer comprises an absorbent material, preferably filter paper, sponge, glass fiber or cellulose and further comprises a gelling agent, preferably a solid gel (optionally dehydrated), a semi-solid gel (optionally dehydrated), or a **powdered** gel. The gelling agent is a gum, agar, agarose, carageenan, bentonite, alginate, collagens, gelatin, fused silicate, water soluble starch, polyacrylate, cellulose, cellulose derivative, polyethylene glycol, polyethylene, oxide, polyvinyl alcohol, dextran, polyacrylamide, and/or polysaccharide.
TECHNOLOGY FOCUS - INSTRUMENTATION AND TESTING - Preferred Device: (I) preferably further comprises a **sensor** layer that undergoes a detectable change in the presence of microorganisms on/in the

immobilization layer, and has a pierceable wall section for piercing during the direct draw of blood from a patient. One or both layers of the device are opaque and/or have **matrixes** that adversely affect the visualization of microorganism colonies. The device preferably further comprises an adhesive layer between the immobilization and **sensor** layers or the **sensor** layer and the container wall. The device optionally contains a conditioning layer next to in within the immobilization layer that comprises lytic agents, lytic enzymes, surfactants and/or components to neutralize growth inhibitors. The container is preferably flat, a holding device open at one end, a closed box of rectangular cross section or a bottle and is held at 0-12 psi. The container of the kit has a headspace above the immobilization layer, a **gas** permeable membrane in the wall of the container and a **gas** impermeable seal next to the **gas** impermeable membrane. The wall of the container is transparent or translucent. Preferred Method: The blood sample is opaque and microorganism colonies in the sample can not be easily seen with the naked eye. The sample has electromagnetic properties and is preferably **fluorescent** and the **sensor** layer undergoes localized changes in these properties in response to the presence or growth of microorganisms. The sample is optionally **colored** and/or **fluorescent** and the **sensor** layer comprises a **fluorescent** of visible pH **indicator.** The immobilization layer is a **powdered** gel and the blood sample is a liquid. The liquid blood sample mixes with the **powdered** gel and adheres to the **sensor** layer.

L141 ANSWER 15 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
AN 1999-216643 [19] WPIX
DNN N1999-159622 DNC C1999-063935
TI Optode **sensor** membrane for **gas** analyzer.
DC E36 H06 J04 Q73 S02 S03 W05 X22
IN ADOLPH, D; HENSEL, A; PFEFFERSEDER, A
PA (BOSC) BOSCH GMBH ROBERT
CYC 27
PI EP 903573 A2 19990324 (199919)* GE 11 G01N021-77 <--
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI
DE 19741335 C1 19990610 (199927) G01N021-59
JP 11153545 A 19990608 (199933) 8 G01N021-77 <--
US 6230545 B1 20010515 (200129) G01N033-84
ADT EP 903573 A2 EP 1998-116154 19980827; DE 19741335 C1 DE 1997-1041335 19970919; JP 11153545 A JP 1998-266817 19980921; US 6230545 B1 US 1998-141295 19980828
PRAI DE 1997-19741335 19970919
IC ICM G01N021-59; **G01N021-77**; G01N033-84
ICS B01D071-06; F23N005-00; G01N021-17; G01N021-41; **G01N021-78**; **G01N031-00**; **G01N031-22**
AB EP 903573 A UPAB: 20011203
NOVELTY - Optode **sensor** membrane for determining the physical and/or chemical parameters of a sample contains an **indicator** substance (I) that changes the absorption properties of the **sensor** membrane for electromagnetic radiation and/or its optical refractive index when in at least indirect contact with a **gas** (mixture).
DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for the apparatus used.
USE - Used in the determination of **gases** in **gas** mixtures, especially for testing exhaust **gases** from internal combustion engines, more especially vehicle exhaust **gases**, and using the results to control the engine; for monitoring indoor air quality and especially using the results to control ventilation and air conditioning; for monitoring and controlling hydrocarbon-fueled combustion plant and fires; in smoke alarms; and as ammonia alarm, especially in cold rooms with refrigerators containing ammonia (all claimed).

ADVANTAGE - The detectors can be miniaturized very easily, as only very small amounts of substance are needed for detection. Concentrations from a few parts per billion (ppb) to a few percent can be determined without cross-**sensitivity**, which normally requires much more expensive equipment. It is also easy to produce the required detection limit by varying the thickness and composition of the membrane.

DESCRIPTION OF DRAWING(S) - The drawing shows the absorption maximum versus ammonia concentration in ppm. Curve B shows the background signal with pure air.

Dwg.5/6

FS CPI EPI GMPI

FA AB; GI; DCN

MC CPI: E11-Q03; E31-D02; E31-H04; E31-H05; E31-N05B; E31-N05C; E32-A02; H06-C04; J04-C04

EPI: S02-J01A; S03-E04B1A; S03-E04B5; S03-E04C1; **S03-E04E**; S03-E09E; S03-E14N; S03-E14P; W05-B02A1; X22-A05B

TECH UPTX: 19990510

TECHNOLOGY FOCUS - INORGANIC CHEMISTRY - Preferred **Indicators**: (I) includes sub-group I-II and V-VIII transition metal complexes.

TECHNOLOGY FOCUS - INSTRUMENTATION AND TESTING - Preferred **Indicator**: (I) is **gas**-specific and especially responds to not less than 2 **gases.** Especially suitable **indicators** are (a) an ion pair, especially from a cationic or anionic **dye** molecules and counter ion); and (b) a substance undergoing a reversible chemical or physical change in contact with the **gas** to be determined, especially (b1) an azobenzene, acetophenone, corrine, porphyrin, phthalocyanin, macrolide, porphyrinogen, nonactine, valinomycine and/or sub-group I-II and V-VIII transition metal complexes; and (b2) a substance showing a reversible change in a (local) absorption maximum, which especially is different for each **gas.** Preferred Membrane: The membrane is based on a chemically inert **polymer.** It may contain a plasticizer, a **gas**-specific **catalyst** and/or a phase transfer **catalyst.** Apparatus: The apparatus has **gas**-permeable membrane(s) of the specified type. It preferably also has electromagnetic radiation detector(s), especially a photodiode; and electromagnetic radiation source(s), especially a light-emitting diode (LED) emitting a discrete selectable wavelength. The membrane is placed between the source and detector, optionally on a support transmitting selected wavelengths, especially on the detector and/or source. This array is placed in a chamber with inlet(s) and outlet(s) for the **gas** mixture. The detectors is provided with an analyzer. The membrane may be placed on an interferometer, especially a wave guide.

TECHNOLOGY FOCUS - ORGANIC CHEMISTRY - Preferred **Indicators**: (I) are selected from (a) an ion pair, especially from a cationic or anionic **dye** molecules and counter ion); and (b) a substance undergoing a reversible chemical or physical change in contact with the **gas** to be determined, especially (b1) an azobenzene, acetophenone, corrine, porphyrin, phthalocyanin, macrolide, porphyrinogen, nonactine, valinomycine and/or sub-group I-II and V-VIII transition metal complexes.

TECHNOLOGY FOCUS - **POLYMERS** - Preferred Membrane: The membrane is based on a chemically inert **polymer.** It may contain a plasticizer, a **gas**-specific **catalyst** and/or a phase transfer **catalyst.**

ABEX UPTX: 19990510

EXAMPLE - 115 mg N,N'-dibenzyl-N,N'-diphenyl-1,2-(phenylenedioxydiacetamide) (ligand), 15.2 mg 3',3'',5',5''-tetrabromo-phenolphthalein ethyl ester, potassium salt (**indicator**), 80 mg bis(2-ethylhexyl)sebacate (plasticizer) and 40 mg polyvinyl chloride were dissolved in 1.2-2 ml tetrahydrofuran. The mixture was applied to a glass slide or other suitable support and dried, giving a homogeneous, transparent gel film (1-4 mum thick). A 3 mum thick membrane was contacted

with air containing varying amounts of ammonia. The height of the absorption maximum at 620 nm correlated accurately with the ammonia concentration (in ppm).

L141 ANSWER 16 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
AN 1998-521390 [44] WPIX
CR 1998-286663 [25]; 2002-470558 [50]; 2003-246670 [24]; 2003-255220 [25]; 2003-810750 [76]
DNN N1998-407153 DNC C1998-156688
TI Detecting concentration of chemical species - uses **sensor** device comprising crystalline colloidal array **polymerised** in hydrogel that changes volume in response to species.
DC A14 A89 B04 D16 E36 J04 S03
IN ASHER, S A; HOLTZ, J H
PA (UYPI-N) UNIV PITTSBURGH; (ASHE-I) ASHER S A
CYC 82
PI WO 9841859 A1 19980924 (199844)* EN 36 G01N033-00
RW: AT BE CH DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SZ UG ZW
W: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GE GH GM GW HU ID IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG UZ VN YU ZW
AU 9866935 A 19981012 (199907)
US 5854078 A 19981229 (199908) G01N033-00
EP 986750 A1 20000322 (200019) EN
R: AT BE CH DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE
US 6187599 B1 20010213 (200111) G01N033-545
MX 9908498 A1 20000201 (200123) G01N033-00
US 2001026946 A1 20011004 (200161) G01N033-545
JP 2001517307 W 20011002 (200172) 36 G01N033-00
JP 3342498 B2 20021111 (200280) 15 G01N033-00
ADT WO 9841859 A1 WO 1998-US4566 19980309; AU 9866935 A AU 1998-66935 19980309; US 5854078 A CIP of US 1996-743816 19961106, US 1997-819240 19970317; EP 986750 A1 EP 1998-909054 19980309, WO 1998-US4566 19980309; US 6187599 B1 CIP of US 1996-743816 19961106, Cont of US 1997-819240 19970317, US 1998-111610 19980707; MX 9908498 A1 MX 1999-8498 19990915; US 2001026946 A1 CIP of US 1996-743816 19961106, Cont of US 1997-819240 19970317, Cont of US 1998-111610 19980707, US 2001-753592 20010103; JP 2001517307 W JP 1998-540570 19980309, WO 1998-US4566 19980309; JP 3342498 B2 JP 1998-540570 19980309, WO 1998-US4566 19980309
FDT AU 9866935 A Based on WO 9841859; EP 986750 A1 Based on WO 9841859; US 6187599 B1 Cont of US 5854078, CIP of US 5898004; US 2001026946 A1 Cont of US 5854078, CIP of US 5898004, Cont of US 6187599; JP 2001517307 W Based on WO 9841859; JP 3342498 B2 Previous Publ. JP 200117307, Based on WO 9841859
PRAI US 1997-819240 19970317; US 1996-743816 19961106;
US 1998-111610 19980707; US 2001-753592 20010103
IC ICM G01N033-00; G01N033-545
ICS C12Q001-68; G01J003-18; **G01N021-78**; G01N033-48; G01N033-50; G01N033-66
AB WO 9841859 A UPAB: 20031125
Detecting the concentration of a **gas** in a solution, comprises: (a) preparing a **sensor** device comprising a crystalline colloidal array (CCA) **polymerised** in a hydrogel (that undergoes a volume change in response to the **gas**), where the CCA has a lattice spacing that changes when the volume of the hydrogel changes, thus causing the diffracted wavelength (DW) of the CCA to change; (b) measuring the DW of the CCA **polymerised** in the hydrogel; (c) contacting the **polymerised** CCA with the solution; (d) measuring the DW of the CCA following exposure to the solution; and (e) comparing the change in DW measurements to determine the concentration of the **gas**.
USE- The invention relates to a process as described above, in which

the hydrogel undergoes a volume change in response to a specific chemical species (e.g. a **gas**). The device may be used in environmental, chemical or chemo-mechanical systems or in medical diagnostic tools. It may be used, e.g., as a **sensor** for lead, as an implant that can be placed directly under the skin, or to determine the concentration of analytes present in fluids (such as tear fluid).

ADVANTAGE- The **sensor** device is specific in that it is modified to react with only one species or family of species.

Dwg.0/9

FS CPI EPI
FA AB; DCN
MC CPI: **A12-L04B**; A12-V03C2; D05-H09; J04-C04
EPI: S03-E14; S03-E14H

L141 ANSWER 17 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
AN 1998-217281 [19] WPIX
CR 1992-351419 [43]; 2002-597712 [64]; 2003-447312 [42]
DNC C1998-068971
TI Detection of **respiring** microorganisms in a fluid - using **fluorescent** compound with reduced **fluorescence** upon exposure to **oxygen** in container in which the fluid is isolated from the atmosphere.
DC A89 B04 D16 E22 E23
IN BEATY, S; BURRELL, G J; FOLEY, T G; HU, J K Y; MONTHONY, J F; SAPITOWICZ, R; STITT, D T; HU, J K
PA (**BECT**) **BECTON DICKINSON & CO**; (**BECT**) **BECTON DICKINSON CO**
CYC 76
PI WO 9812348 A1 19980326 (199819)* EN 41 C12Q001-04
RW: AT BE CH DE DK EA ES FI FR GB GH GR IE IT KE LS LU MC MW NL OA PT SD SE SZ UG ZW
W: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GE HU IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK TJ TM TR TT UA UG US UZ VN
AU 9744839 A 19980414 (199839)
EP 1021557 A1 20000726 (200037) EN
R: DE FR GB IT
JP 2002501363 W 20020115 (200207) 42 C12Q001-04
ADT WO 9812348 A1 WO 1997-US16496 19970918; AU 9744839 A AU 1997-44839 19970918; EP 1021557 A1 EP 1997-943349 19970918, WO 1997-US16496 19970918; JP 2002501363 W WO 1997-US16496 19970918, JP 1998-514841 19970918
FDT AU 9744839 A Based on WO 9812348; EP 1021557 A1 Based on WO 9812348; JP 2002501363 W Based on WO 9812348
PRAI US 1996-715557 19960918
IC ICM C12Q001-04
ICS C12Q001-18; **G01N021-77**
AB WO 9812348 A UPAB: 20030703
Detection of the presence of **respiring** microorganisms in a fluid comprises: (a) placing the fluid in a container in which the fluid is isolated from atmospheric **oxygen** and placing within the container, but not in direct contact with the fluid, a **sensor** composition which comprises a **fluorescent** compound that exhibits a reduction in **fluorescent** intensity when irradiated with light containing wavelengths which cause the compound to **fluoresce**, upon exposure to **oxygen**, where the presence of the **sensor** composition is non-destructive to the microorganism; (b) irradiating the **sensor** composition with light containing wavelengths which cause the **fluorescent** compound to **fluoresce**; (c) measuring or visually observing the **fluorescent** light intensity from the **fluorescent** compound while irradiating the **sensor** compound with the light; (d) comparing the measurement to that of a control not containing **respiring** microorganism, where the control is selected from a

reagent control not in contact with **respiring** microorganisms and a calculated threshold, where change in **fluorescent** intensity relative to the **fluorescent** intensity of the control is **indicative** of the presence of **respiring** microorganisms; (e) in the event that no such increase is measured or observed, repeat steps (b), (c) and (d) as needed, to detect the presence of **respiring** microorganisms in the fluid.

The **fluorescent** compound may be e.g. tris-4,7-diphenyl-1,10-phenanthroline ruthenium (II) chloride (Ru(DPP)3Cl2), tris-2,2'-bipyridyl ruthenium (II) salt, or 9,10-diphenyl anthracene. The **fluorescent** compound may be contained in a **matrix**, preferably a silicone rubber **matrix.**

USE - The methods can be used for the measurement and/or detection of **respiring** microorganisms. They can also be used to test the susceptibility of a microorganism to a compound, such as an antibiotic, which is capable of severely inhibiting the growth and/or the metabolic activity of organisms (all claimed).

ADVANTAGE - The methods provide a system which can be simply read and visually interpreted, and which permits results to be obtained in a shorter time period than previously attainable, nominally 6 hours or less. The measurement of **fluorescence** is non-destructive and if after a period of time (e.g. 4 hours) the results are non-conclusive, the system can be re-incubated and read again at a later time.

Dwg.0/6

FS CPI
FA AB; DCN
MC CPI: **A12-L04B**; A12-V03C2; A12-W11L; B04-F01; **B11-C07B3** ; B12-K04; D05-H04; D05-H05; E24-A03

L141 ANSWER 18 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
AN 1997-549320 [50] WPIX
DNN N1997-458093 DNC C1997-175102
TI Reporter bead for flow-cytometric **fluorescent** measurement of analyte concentration - comprises reporter molecules immobilised on or in substrate.
DC A97 B04 C07 D15 D16 J04 S03
IN VAN DEN ENGH, G; WEIGL, B H
PA (UNIW) UNIV WASHINGTON
CYC 21
PI WO 9735189 A1 19970925 (199750)* EN 40 G01N031-22 <--
RW: AT BE CH DE DK ES FI FR GB GR IE IT LU MC NL PT SE
W: AU CA JP
AU 9740001 A 19971010 (199806) G01N031-22 <--
US 5747349 A 19980505 (199825) G01N033-00
ADT WO 9735189 A1 WO 1997-US4099 19970314; AU 9740001 A AU 1997-40001 19970314; US 5747349 A US 1996-621170 19960320
FDT AU 9740001 A Based on WO 9735189
PRAI US 1996-621170 19960320
REP EP 345782; EP 475045; EP 519198; US 4269516; US 5288642; WO 9207245
IC ICM **G01N031-22**; G01N033-00
ICS G01N021-01; **G01N021-64**
AB WO 9735189 A UPAB: 19980119
Reporter bead comprises a substrate bead and first type of reporter molecule immobilised on or in the bead. The **fluorescence** property of the molecules is a function of the concentration of the analyte in the bulk fluid. The **fluorescence** from a signal bead is sufficient for detection by flow cytometry. Also claimed are: (1) a reporter bead cartridge (A) for coupling with the fluid inlet of a flow cytometer and comprising the reporter beads; (2) a disposable flow module with a flow cytometer optical head which comprises a flow channel, a flow inlet port coupled to a first end of the flow channel, a cartridge (A) coupled to the fluid inlet port and a fluid outlet port coupled to a second end of the flow channel and (C) a method of measuring the

concentration of an analyte in the fluid bulk of a sample fluid which comprises mixing th reporter beads with sample fluid, flowing the sample fluid through the measurement zone of a flow cytometer, optical exciting the reporter molecules, measuring the **fluorescence** of the reporter molecules and obtaining the concentration of the analyte from the **fluorescence.**

The bead preferably comprises glass, latex, hydrogel, polystyrene, liposome or **polymer.** Reporter molecule is pH, **oxygen**, **carbon dioxide**, chloride, albumin, halide or sodium, potassium or calcium ion.

USE - The bead is used for flow cytometric **fluorescent** measurement of the concentration of analyte over an analytic range in a bulk fluid. The bead can also be used for measuring the cell content of biological samples.

ADVANTAGE - Several fluid bulk analytes may be measured simultaneously using microscale volumes. Dilution of the sample fluid is minimised and accurate measurement of the sample volume is not required. The number of beads added need not be precisely determined and the measurement does not require incubation, washing or filtering steps. Reporter molecules are immobilised on substrate beads so that incompatibilities between different types of reporter molecules are removed. Beads tagged with different reporter molecules can be mixed in one sample.

Dwg.1/5

FS CPI EPI
FA AB; GI; DCN
MC CPI: **A12-L04B**; B04-B04D2; B04-C03; B04-D02; B05-A01A; B05-A01B; B05-C04; B05-C07; B05-C08; **B11-C07B3**; B11-C09; B12-K04A; B04-B04D2; C04-B04D2; B04-C03; C04-C03; B04-D02; C04-D02; B05-A01A; C05-A01A; B05-A01B; C05-A01B; B05-C04; C05-C04; B05-C07; C05-C07; B05-C08; C05-C08; **B11-C07B3**; **C11-C07B3**; B11-C09; C11-C09; B12-K04A; C12-K04A; C04-B04D2; C04-C03; C04-D02; C05-A01A; C05-A01B; C05-C04; C05-C07; C05-C08; **C11-C07B3**; C11-C09; C12-K04A; D04-A; D05-H09; J04-B01A
EPI: S03-E04D; S03-E04H; S03-E09E; S03-E14H1; S03-F05C; S03-F06C

L141 ANSWER 19 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
AN 1997-300828 [28] WPIX
DNN N1997-248594 DNC C1997-097557
TI Imprinted material permitting selective association of relatively small species - is useful in chemical separation, biochemical separation, assays, **sensing** and immunoassays.
DC A89 B04 D16 E11 E12 J04 S03
IN BYFIELD, M P
PA (MAON) GEC-MARCONI LTD
CYC 20
PI GB 2308369 A 19970625 (199728)* 34 B01D053-00
WO 9722410 A1 19970626 (199731) EN 37 B01J020-32
RW: AT BE CH DE DK ES FI FR GB GR IE IT LU MC NL PT SE
W: JP US
EP 956156 A1 19991117 (199953) EN B01J020-32
R: CH DE ES FR GB IT LI NL SE
GB 2308369 B 20000517 (200026) B01D053-00
ADT GB 2308369 A GB 1996-2009 19960131; WO 9722410 A1 WO 1996-GB3136 19961218; EP 956156 A1 EP 1996-942489 19961218, WO 1996-GB3136 19961218; GB 2308369 B GB 1996-2009 19960131
FDT EP 956156 A1 Based on WO 9722410
PRAI GB 1995-26109 19951220
REP 2.Jnl.Ref; DE 4338732; EP 619141; SE 8404967; US 5110833; US 5587273; WO 9213447; WO 9521673
IC ICM B01D053-00; B01J020-32
AB GB 2308369 A UPAB: 19970723
Imprinted material (IM) which permits selective association of relatively

small species (RSS) (preferably of molecular weight at most 150) with IM is new. Also claimed are: (1) preparation of IM which includes the use of a selected species and a companion species; (2) a **sensor** which includes IM; and (3) a test-kit which includes IM.

USE - IM is useful in chemical separation, biochemical separation, assays (both quantitative and qualitative), **sensing** (e.g. chemical **sensing**) and immunoassays.

Dwg.0/2

FS CPI EPI

FA AB; DCN

MC CPI: A12-L04; A12-V03C2; B05-A03; B05-C01; B05-C03; B05-C04; B05-C05; B05-C08; B06-D18; B12-K04E; D05-H09; E05-G; E05-L; E05-M; E05-N; E10-A15; E10-B04; E10-F02; E10-G02; E10-H01; E10-J01; E10-J02B; E11-Q01; E11-Q03; E31-A; E31-D; E31-F; E31-H; E31-N05; E32-A; E35; J04-B01; J04-C04

EPI: S03-E01C; S03-E02; S03-E04D; **S03-E04E**; S03-E08C; S03-E14H4

L141 ANSWER 20 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN

AN 1997-280643 [25] WPIX

DNN N1997-232584 DNC C1997-090117

TI Fibre optic **sensor** to measure analyte in fluid at remote location - has **sensing** layer, containing **indicator**, laminated to adhesive layer bonded at distal end of fibre, used to measure pH, blood **gases**, etc..

DC A96 B04 E19 J04 S02 S03 V07

IN FOWLER, W; JOHNSON, D K; KALLA, J; LYNCH, L; SEIFERT, K R

PA (OPTI-N) OPTICAL SENSORS INC

CYC 20

PI	WO 9709609	A1	19970313 (199725)*	EN	47	G01N021-64	<--
	RW: AT BE CH DE DK ES FI FR GB GR IE IT LU MC NL PT SE						
	W: CA JP						
	US 5656241	A	19970812 (199738)		14	G01N021-64	<--
	EP 848813	A1	19980624 (199829)	EN		G01N021-64	<--
	R: DE ES FR GB IT NL						
	US 5900215	A	19990504 (199925)			G01N021-64	<--
	JP 2000501499	W	20000208 (200018)		39	G01N021-75	
	CA 2231113	C	20020423 (200231)	EN		G01N021-00	

ADT WO 9709609 A1 WO 1996-US13762 19960827; US 5656241 A US 1995-524592 19950907; EP 848813 A1 EP 1996-929752 19960827, WO 1996-US13762 19960827; US 5900215 A Div ex US 1995-524592 19950907, US 1997-855939 19970514; JP 2000501499 W WO 1996-US13762 19960827, JP 1997-511255 19960827; CA 2231113 C CA 1996-2231113 19960827, WO 1996-US13762 19960827

FDT EP 848813 A1 Based on WO 9709609; US 5900215 A Div ex US 5656241; JP 2000501499 W Based on WO 9709609; CA 2231113 C Based on WO 9709609

PRAI US 1995-524592 19950907; US 1997-855939 19970514

REP US 4954318; US 5120510; US 5152287; US 5326531

IC ICM G01N021-00; **G01N021-64**; G01N021-75

ICS G01N021-80

AB WO 9709609 A UPAB: 19970619

Fibre optic **sensor** for detecting or measuring a parameter of interest in a sample fluid comprises: (a) an elongated optical fibre means, having a distal end adapted to contact a sample fluid and a proximal end for receiving the signal from the distal end and relaying to a means of detection; (b) an adhesive layer bonded to the distal end, and (c) a **sensing** layer containing an **indicator** **sensitive** to a parameter of interest in the sample fluid and providing a signal related response, laminated to the adhesive layer.

USE - The system is designed to detect and measure analyte at a remote location and can be used in scientific research, medicine and industry, e.g. for the detection and measurement of biological fluids, particularly blood, especially of pH or **oxygen** or **carbon dioxide** concentration (pO2 or pCO2), glucose, potassium, calcium and magnesium ions. The apparatus can be sterilised if

desired.

ADVANTAGE - The **sensor** is simple to assemble by dip **coating** and amenable to mass production. The curing of adhesive on the fibre surface can be left incomplete to provide better bonding for the next layer, either of adhesive or **indicator.** The **sensor** has improved **sensitivity** and/or reliability compared to previous designs and materials leachable and/or unstable to hydrolysis and difficulties of even deposit on the surface, are avoided. The use of multilayers of adhesive, or moulding or forming the adhesive, may provide additional surface area for the **indicator**, in turn enhancing the response signal.

Dwg.0/5

FS CPI EPI

FA AB; DCN

MC CPI: A12-L03A; **A12-L04B**; A12-V03C2; B04-B04D5; B04-C03B; B04-C03D; B05-A01A; B05-A01B; B05-C04; B05-C08; B06-A03; B10-A07; B11-C07B2; B12-K04; E10-A07; E11-Q03; E31-D02; E31-N05C; E33-F; E34-B04; E34-D03; J04-B01; J04-C04

EPI: S02-K08A; S03-E03X; S03-E04D; S03-E14H; V07-N

ABEQ US 5656241 A UPAB: 19970922

A method of making a fiber optic **sensor** for detecting or measuring a parameter of interest in a sample fluid, comprising:

(a) providing an elongated optical fiber means having a distal tip and a proximal section for receiving a signal from the distal tip and relaying the signal to a detection means, wherein the surface of the optical fiber means is exposed at the distal tip;

(b) applying an adhesive composition over the exposed surface at the distal tip of the optical fiber means to provide an adhesive layer thereon capable of being formed into a desired configuration, wherein the adhesive composition is selected to harden and bond to a substrate upon curing with a **cross-linking** agent, or with light, or both;

(c) optionally forming the adhesive layer into a desired configuration;

(d) curing the adhesive layer to a predetermined degree;

(e) applying an **indicator** composition over the adhesive layer to form a **sensing** layer thereon, wherein the **indicator** composition contains an **indicator** component which is **sensitive** to a parameter of interest in the sample fluid and provides a signal related thereto; and

(f) optionally curing the **sensing** layer.

Dwg.0/5

L141 ANSWER 21 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN

AN 1996-200283 [20] WPIX

CR 1995-089276 [12]

DNN N1996-168117 DNC C1996-063241

TI Measuring analyte by changing the **fluorescence** of **fluorophore** - by incorporating **fluorophore** and quat. onium cpd. in low dielectric medium, measuring **fluorescence**, exposing to analyte, measuring **fluorescence** change and determining concentration of analyte.

DC B04 D16 J04 S03

IN MUNKHOLM, C

PA (CIBA) CIBA CORNING DIAGNOSTICS CORP

CYC 1

PI US 5506148 A 19960409 (199620)* 20 G01N033-00

ADT US 5506148 A Div ex US 1993-116436 19930903, US 1994-214340 19940316

PRAI US 1993-116436 19930903; US 1994-214340 19940316

IC ICM G01N033-00

AB US 5506148 A UPAB: 19960520

Measuring an analyte which changes the **fluorescence** of a **fluorophore**, where the analyte can permeate through a low dielectric medium comprises: (a) incorporating a **fluorophore** and

quat. onium cpd. in a low dielectric medium, the **fluorophore** being a polyanionic **fluorescent dye** which undergoes a complete loss of **fluorescence** when solubilised in a low dielectric medium, the **fluorescence** being restored by the presence of the quat. onium cpd.; (b) measuring the **fluorescence**; (c) exposing the medium to a solution containing the analyte to be measured; (d) measuring the **fluorescence** change due to the analyte; and (e) determining the concentration of the analyte by reference to a calibration curve. Also claimed is an optical **sensing** device for determining the concentration of an analyte comprising a polyanionic **fluorophore** and quat. onium cpd. in a low dielectric **polymer** membrane on the surface of an optical component which is transparent to incident and emissive electromagnetic waves, optically connected to means for collecting the radiant emission to measure the **fluorescence** **indicative** of the concentration of the analyte.

USE - The method may be used for measuring an analyte and is useful in **sensor** devices.

Dwg.0/8

FS CPI EPI
FA AB; DCN
MC CPI: B05-C01; B05-C04; B05-C08; B06-A01; B06-A03; **B11-C07B3**; B12-K04; D05-H09; J04-C02
EPI: S03-E14

L141 ANSWER 22 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
AN 1995-393055 [50] WPIX
CR 1995-393166 [50]
DNN N1995-286566 DNC C1995-169340
TI **Polymerisable** compsn. for mfg. **sensor** membranes - comprising chemically bonded **indicator dye** and having controlled deg. of hydrophilicity.
DC A18 A89 E24 G02 J04 P73 S03
IN BARNARD, S; ROUILLY, M; ALDER, A; BARNARD, S M; BERGER, J; BLOM, N
PA (CIBA) CIBA GEIGY AG; (NOVS) NOVARTIS AG; (NOVS) NOVARTIS-ERFINDUNGEN VERWALTUNGS GMBH; (NOVS) NOVARTIS-ERFINDUNGEN VERW GES MBH
CYC 65

PI	WO 9529959	A1	19951109 (199550)*	EN	26	C09D004-06
	RW: AT BE CH DE DK ES FR GB GR IE IT KE LU MC MW NL OA PT SD SE SZ UG					
	W: AM AU BB BG BR BY CA CN CZ EE FI GE HU IS JP KG KP KR KZ LK LR LT LV MD MG MN MX NO NZ PL RO RU SG SI SK TJ TM TT UA US UZ VN					
	AU 9522223	A	19951129 (199609)			C09D004-06
	FI 9604334	A	19961101 (199707)			C09D000-00
	CZ 9603186	A3	19970212 (199713)			C09D004-06
	EP 758361	A1	19970219 (199713)	EN		C09D004-06
	R: AT BE CH DE DK ES FR GB GR IE IT LI LU MC NL PT SE					
	SK 9601417	A3	19970507 (199731)			C09D004-06
	HU 75507	T	19970528 (199805)			C09D004-06
	JP 10504047	W	19980414 (199825)		31	C08F291-00
	KR 97702905	A	19970610 (199825)			C09D004-06
	EP 881241	A2	19981202 (199901)	EN		C08F220-54
	R: CH DE FR GB IT LI					
	US 5852126	A	19981222 (199907)			C08F214-18
	MX 9605326	A1	19980201 (199954)			C09D004-06
	EP 758361	B1	20001115 (200059)	EN		C08F291-00
	R: AT BE CH DE DK ES FR GB GR IE IT LI LU MC NL PT SE					
	DE 69519427	E	20001221 (200106)			C08F291-00
	CN 1147267	A	19970409 (200108)			C09D004-06
	CN 1147301	A	19970409 (200108)			G01N031-22 <--
	JP 3476196	B2	20031210 (200382)		11	C08F291-00

ADT WO 9529959 A1 WO 1995-IB301 19950427; AU 9522223 A AU 1995-22223 19950427; FI 9604334 A WO 1995-IB301 19950427, FI 1996-4334 19961028; CZ 9603186 A3 CZ 1996-3186 19950427; EP 758361 A1 EP 1995-915287 19950427, WO 1995-IB301 19950427; SK 9601417 A3 WO 1995-IB301 19950427, SK 1996-1417 19950427; HU

75507 T WO 1995-IB301 19950427, HU 1996-3034 19950427; JP 10504047 W JP 1995-528098 19950427, WO 1995-IB301 19950427; KR 97702905 A WO 1995-IB301 19950427, KR 1996-706157 19961101; EP 881241 A2 Div ex EP 1995-915288 19950427, EP 1998-113043 19950427; US 5852126 A WO 1995-IB301 19950427, US 1996-737029 19961030; MX 9605326 A1 MX 1996-5326 19961101; EP 758361 B1 EP 1995-915287 19950427, WO 1995-IB301 19950427; DE 69519427 E DE 1995-619427 19950427, EP 1995-915287 19950427, WO 1995-IB301 19950427; CN 1147267 A CN 1995-192883 19950427; CN 1147301 A CN 1995-192833 19950427; JP 3476196 B2 JP 1995-528098 19950427, WO 1995-IB301 19950427

FDT AU 9522223 A Based on WO 9529959; EP 758361 A1 Based on WO 9529959; HU 75507 T Based on WO 9529959; JP 10504047 W Based on WO 9529959; KR 97702905 A Based on WO 9529959; EP 881241 A2 Div ex EP 758451; US 5852126 A Based on WO 9529959; EP 758361 B1 Based on WO 9529959; DE 69519427 E Based on EP 758361, Based on WO 9529959; JP 3476196 B2 Previous Publ. JP 10504047, Based on WO 9529959

PRAI CH 1995-1068 19950411; CH 1994-1360 19940502

IC ICM C08F214-18; C08F220-54; C08F291-00; C09D000-00; C09D004-06; **G01N031-22**

ICS B32B017-10; B32B027-32; C07D311-80; C08F216-06; C08F216-12; C08F220-00; C08F220-58; C08F226-10; C09B069-10; C09D004-00

AB WO 9529959 A UPAB: 20031223

A **polymerisable** compsn. comprises: (a) at least one olefinic monomer (A); (b) at least one **polymer** of at least one olefinic monomer; (c) an **indicator dye** with an olefinic **polymerisable** gp. covalently bonded to its basic structure, either directly or via a bridge gp.; (d) at least one diolefinic **crosslinking** agent; and (e) an effective amount of a **polymerisation** initiator.

Also claimed are: (1) a carrier that has a layer of the above compsn. applied to at least one surface; (2) a carrier that has a **polymer** layer derived from the above compsn. applied to at least one surface; (3) an optical **sensor** that has a **polymer** layer derived from the above compsn. applied to at least one surface; (4) the use of **sensor** (3) for the optical determination of ions or **gases** ; and (5) a **polymer** derived from the above compsn., pref. in the form of an unsupported film.

USE - The compsn. is used to make membranes suitable for optical **sensors** for the determination of ions or **gas** (claimed), e.g. **O2 CO2**, optionally on a carrier.

ADVANTAGE - The membranes have excellent mechanical strength. The **dye indicator** cannot be washed out as it is bonded covalently to the **polymer** spine, which provides a long usable life. The compsn. is storage stable and membranes are optically transparent because they are homogenous. The deg. of hydrophilicity can be controlled, especially allowing optical pH detection over a selected measuring range. The compsn. has a viscosity low enough to permit spin-casting as a **coating** on a carrier material. Ecologically favourable mfg. process can be used, including using aqueous **coating** solns. and carrying out **polymerisation** directly on the carrier. Layer thickness if reproducible, even with very thin layers, eliminating the need for re-calibration when a **sensor** is replaced.

Dwg.0/0

FS CPI EPI GMPI

FA AB; DCN

MC CPI: A08-C01; A09-A; **A12-L04B**; E11-Q03L; E31-D02; E31-N05C; G02-A05; J04-C04

EPI: S03-E09E

L141 ANSWER 23 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN

AN 1995-302810 [39] WPIX

DNN N1995-229883 DNC C1995-135570

TI Stabilised bio-inert **sensor** for **oxygen** or **carbon di oxide** concentration determn. in liquid medium

- comprises chemical **indicator sensitive** to analyte and stabilising substrate which is **crosslinked**, solid, silicone carbinol rubber **polymer.**

DC A26 A96 B04 E24 P31 S03
IN JOVANOVIC, M V; MARKLE, D R
PA (BIOM-N) BIOMEDICAL SENSORS LTD; (DIAM-N) DIAMETRICS MEDICAL LTD
CYC 24

PI	WO 9522759	A1	19950824	(199539)* EN	22	G01N031-22	<--
	RW: AT BE CH DE DK ES FR GB GR IE IT LU MC NL PT SE						
	W: AU CA DE JP KR MX						
	AU 9513909	A	19950904	(199549)		G01N031-22	<--
	US 5511547	A	19960430	(199623)	8	A61B005-00	
	DE 29580807	U1	19961024	(199648)	25	G01N031-22	<--
	ZA 9501219	A	19961030	(199649)	21	A61B000-00	
	EP 745220	A1	19961204	(199702) EN		G01N031-22	<--
	R: AT BE CH DE DK ES FR GB GR IE IT LI LU NL PT SE						
	JP 09502528	W	19970311	(199720)	23	G01N031-22	<--
	KR 97701348	A	19970317	(199813)		G01N031-22	<--
	MX 9603433	A1	19970301	(199820)		G01N031-22	<--
	JP 2821026	B2	19981105	(199849)	10	A61B005-14	
	EP 745220	B1	20000412	(200023) EN		G01N031-22	<--
	R: AT BE CH DE DK ES FR GB GR IE IT LI LU NL PT SE						
	DE 69516272	E	20000518	(200031)		G01N031-22	<--
	KR 171549	B1	19990501	(200051)		G01N031-22	<--

ADT WO 9522759 A1 WO 1995-IB36 19950118; AU 9513909 A AU 1995-13909 19950118; US 5511547 A US 1994-197423 19940216; DE 29580807 U1 DE 1995-2080807 19950118, WO 1995-IB36 19950118; ZA 9501219 A ZA 1995-1219 19950215; EP 745220 A1 EP 1995-905214 19950118, WO 1995-IB36 19950118; JP 09502528 W JP 1995-521687 19950118, WO 1995-IB36 19950118; KR 97701348 A WO 1995-IB36 19950118, KR 1996-704438 19960814; MX 9603433 A1 MX 1996-3433 19960815; JP 2821026 B2 JP 1995-521687 19950118, WO 1995-IB36 19950118; EP 745220 B1 EP 1995-905214 19950118, WO 1995-IB36 19950118; DE 69516272 E DE 1995-616272 19950118, EP 1995-905214 19950118, WO 1995-IB36 19950118; KR 171549 B1 WO 1995-IB36 19950118, KR 1996-704438 19960814

FDT AU 9513909 A Based on WO 9522759; DE 29580807 U1 Based on WO 9522759; EP 745220 A1 Based on WO 9522759; JP 09502528 W Based on WO 9522759; KR 97701348 A Based on WO 9522759; JP 2821026 B2 Previous Publ. JP 09502528, Based on WO 9522759; EP 745220 B1 Based on WO 9522759; DE 69516272 E Based on EP 745220, Based on WO 9522759

PRAI US 1994-197423 19940216
REP EP 448052; US 413114; US 4712865; US 5275645; WO 9105252
IC ICM A61B000-00; A61B005-14; **G01N031-22**
ICS C01B000-00; C07B000-00; C08G018-61; C08G077-04; C08G077-16; C08G077-38; C08G077-388; C08L083-06; **G01N021-77**; **G01N031-00**; G01N033-533
ICA A61B005-00

AB WO 9522759 A UPAB: 19970909
Stabilised bio-inert **sensor** for determining an analyte in a medium, comprises a chemical **indicator sensitive** to the analyte in association with a stabilising substrate. The substrate is formed from a **polymer** which is inert to the medium and analyte, and which does not affect the **sensitivity** of the **indicator.** The **polymer** is a **crosslinked**, solid, silicone rubber formed from a silicone carbinol with a molecular structure compatible with the **indicator.**

USE - Solid state **sensors** especially for determining concentration of **gases**, partic. partial pressures of **O2** and **CO2** and of pH. Useful for liquid media especially human blood.

ADVANTAGE - Stable bio-inert **sensor** in which **indicator** is not leached or washed away. **Sensor** has short response time and good **sensitivity.**

Dwg.0/0

FS CPI EPI GMPI

FA AB; DCN
MC CPI: A06-A00E3; A06-A00E4; **A12-L04B**; A12-V03C2; B04-B04D5; B04-C03D; B05-A03B; B05-C04; B05-C08; B06-C; B06-D05; B10-A22; **B11-C07B3**; B12-K04A; E05-M; E10-A01; E11-Q03L; E31-D02; E31-N05C
EPI: **S03-E04E**; S03-E09E
ABEQ US 5511547 A UPAB: 19960610
A stabilized, bio-inert **sensor** for the determination of an analyte in a medium which comprises a chemical **indicator sensitive** to the analyte in association with a stabilizing substrate formed from a **polymer** which is inert to the medium and analyte and does not affect the **sensitivity** of the **indicator**, which **polymer** is a **crosslinked**, solid silicone rubber formed from a silicone carbinol having a molecular structure compatible with said **indicator.**
Dwg.0/0

L141 ANSWER 24 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
AN 1995-089276 [12] WPIX
CR 1996-200283 [20]
DNC C1995-040539
TI Activating the **fluorescence** of **dyes** in low dielectric media - by addition of quat. onium cpd..
DC A89 B04 E24 J04
IN MUNKHOLM, C; MUNKHOLM, C S
PA (CIBA) CIBA CORNING DIAGNOSTICS CORP; (FARB) BAYER CORP
CYC 60

PI	US 5387525	A	19950207 (199512)*		20	G01N033-00	
	WO 9506871	A2	19950309 (199515)	EN	53	G01N021-64	<--
	RW: AT BE CH DE DK ES FR GB GR IE IT KE LU MC MW NL OA PT SD SE						
	W: AM AT AU BB BG BR BY CA CH CN CZ DE DK EE ES FI GB GE HU JP KG KP KR KZ LK LR LT LU LV MD MG MN MW NL NO NZ PL PT RO RU SD SE SI SK TJ TT UA US UZ VN						
	AU 9473910	A	19950322 (199527)			G01N021-64	<--
	WO 9506871	A3	19950427 (199615)			G01N033-00	
	EP 716740	A1	19960619 (199629)	EN		G01N021-64	<--
	R: AT BE CH DE DK ES FR GB IT LI						
	EP 716740	B1	19970205 (199711)	EN	30	G01N021-64	<--
	R: AT BE CH DE DK ES FR GB IT LI						
	JP 09500685	W	19970121 (199713)		54	C09K011-06	
	DE 69401717	E	19970320 (199717)			G01N021-64	<--
	ES 2099626	T3	19970516 (199727)			G01N021-64	<--
	AU 687854	B	19980305 (199820)			G01N021-64	<--
	MX 186618	B	19971023 (199901)			G01N033-000	
	JP 2866201	B2	19990308 (199915)		21	C09K011-06	
	KR 171534	B1	19990501 (200051)			G01N021-04	
	CA 2170592	C	20001121 (200065)	EN		C09K011-06	

ADT US 5387525 A US 1993-116436 19930903; WO 9506871 A2 WO 1994-IB260 19940830; AU 9473910 A AU 1994-73910 19940830; WO 9506871 A3 WO 1994-IB260 19940830; EP 716740 A1 EP 1994-923826 19940830, WO 1994-IB260 19940830; EP 716740 B1 EP 1994-923826 19940830, WO 1994-IB260 19940830; JP 09500685 W WO 1994-IB260 19940830, JP 1995-508027 19940830; DE 69401717 E DE 1994-601717 19940830, EP 1994-923826 19940830, WO 1994-IB260 19940830; ES 2099626 T3 EP 1994-923826 19940830; AU 687854 B AU 1994-73910 19940830; MX 186618 B MX 1994-6729 19940902; JP 2866201 B2 WO 1994-IB260 19940830, JP 1995-508027 19940830; KR 171534 B1 WO 1994-IB260 19940830, KR 1996-701077 19960302; CA 2170592 C CA 1994-2170592 19940830, WO 1994-IB260 19940830
FDT AU 9473910 A Based on WO 9506871; EP 716740 A1 Based on WO 9506871; EP 716740 B1 Based on WO 9506871; JP 09500685 W Based on WO 9506871; DE 69401717 E Based on EP 716740, Based on WO 9506871; ES 2099626 T3 Based on EP 716740; AU 687854 B Previous Publ. AU 9473910, Based on WO 9506871; JP 2866201 B2 Previous Publ. JP 09500685, Based on WO 9506871; CA 2170592 C Based on WO 9506871

PRAI US 1993-116436 19930903
REP 5.Jnl.Ref; US 5034189; US 5047627; WO 9105252; WO 9304368
IC ICM C09K011-06; G01N021-04; **G01N021-64**; G01N033-00; G01N033-000
ICS C09B067-42; **G01N021-77**; **G01N021-78**;
G01N031-00
AB US 5387525 A UPAB: 20001214
Activating the **fluorescence** of a polyanionic **fluorescent dye** (PFD) in low dielectric media, comprises: (a) incorporating the PFD in a low dielectric medium, in which the PFD is quenched; (b) adding an activation cpd. including a quat. onium cpd. which interacts with the quenched **fluorophore** in a manner to restore the **fluorescence** and create an activated **fluorophore** in the low dielectric medium; and (c) measuring the **fluorescence** or **fluorescence** parameter generated.
USE - The process may be used e.g. to activate **fluorescence** in **polymer coatings** where the **fluorescence** would normally be quenched. The **polymer coatings** may be used as **fluorescent coatings** or as transducer **coatings** for optical **sensors.**
ADVANTAGE - The process allows the PFD to retain its **fluorescence** activity in situations where it would otherwise not be useful as an analytical reagent.
Dwg.0/8
FS CPI
FA AB; DCN
MC CPI: A12-B01; A12-L03; A12-L04; B04-C02A; B04-C03B; B04-C03D; B06-A03; B10-A09B; B10-A22; B10-E04D; B10-J02; **B11-C07B3**; B12-K04; E10-A22A; E10-A22G; J04-X
ABEQ EP 716740 B UPAB: 19970313
A method for activating the **fluorescence** of a polyanionic **fluorescent dye** in a low dielectric medium characterised in that it comprises: (a) incorporating the **fluorescent dye** in a low dielectric medium, which may be liquid, **gaseous** or solid, such **dye** being quenched in such medium; (b) adding an activation component including a quaternary onium compound, which interacts with the quenched **fluorophore** in a manner to restore the **fluorescence** and create an activated **fluorophore** in the low dielectric medium; and (c) measuring the **fluorescence** or **fluorescent**-related parameter generated.
Dwg.0/8

L141 ANSWER 25 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
AN 1994-167643 [20] WPIX
CR 1995-169212 [22]
DNN N1994-131883 DNC C1994-076871
TI Fibre-optic probe for **colorimetric** measurements of fluids - each fibre having optical gap forming chamber containing **colorimetric sensor** material and enclosed by analyte permeable membrane.
DC A89 B04 J04 P31 S03 S05 V07
IN SINGH, R
PA (OPTE-N) OPTEX BIOMEDICAL INC
CYC 18
PI WO 9410553 A1 19940511 (199420)* EN 97 G01N021-64 <--
RW: AT BE CH DE DK ES FR GB GR IE IT LU MC NL PT SE
W: CA JP
ADT WO 9410553 A1 WO 1993-EP2772 19931007
PRAI US 1992-965193 19921023
REP 6.Jnl.Ref; EP 344313; EP 352610; JP 53039979; US 4727730; US 4889407; US 4994396; US 5047208; US 5119463; WO 8700920; WO 9118306
IC ICM **G01N021-64**
ICS A61B005-00; **G01N021-77**
AB WO 9410553 A UPAB: 19950619
An optical probe for **colorimetric** measurement includes a body

(14) with a tip and containing **sensors** (12). These are each formed by an optical fibre with a small slice extracted from it near its tip to form an optical gap. A chamber opens from the surface of the body and extends into its interior to expose the faces of the optical fibre at the gap. **Colorimetric sensor** material is located in the chamber. An analyte-permeable membrane (28) covers the chamber opening.

The **colorimetric sensor** material comprises a water-soluble **indicator** retained by either being covalently bonded to a solid support (22) or by the support being encapsulated in a water-insoluble **coating.**

Also claimed is **gas** analyte **sensor** **indicator matrix** paste for use in a fibre optic **sensor** probe. The paste comprises an **indicator** **matrix** containing **indicator** molecules on a support of either porous glass particles or a **silica** gel based porous material and a support **polymer** of nonionic gel. Also claimed is a **gas** analyte-permeable membrane comprising a **coating** of a cellulose acetate ester. Also claimed is a fibre-optic probe with an anti- thrombogenic overcoating.

USE/ADVANTAGE - The probe monitors fluid parameters, especially physiological blood characteristics, e.g. blood pH, pO2, or pCO2 and electrolytes. A single probe can measure several parameters so that a patient is not overtaxes with a number of separate probes.

Dwg.2/3

FS CPI EPI GMPI
FA AB; GI; DCN
MC CPI: A12-L03A; A12-V03C2; B04-B04D5; B04-C02A3; B04-C03; B04-D02; B05-A03B; B05-B02C; B05-C04; B05-C08; B06-D13; B07-D04C; B11-C02; B11-C04; B11-C07B2; B12-K04A; B14-F04; J04-B01
EPI: **S03-E04E**; S03-E14H1; S05-D01G; V07-X

L141 ANSWER 26 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
AN 1994-116971 [14] WPIX
CR 1993-060066 [08]; 1993-145347 [18]; 1993-145348 [18]; 1995-177523 [23]; 1996-159694 [16]
DNN N1994-091609 DNC C1994-054230
TI Analyte **sensor** especially for **oxygen** in blood - contains analyte-**sensitive indicator** component covalently bonded to **polymeric matrix** material.
DC A89 B04 E14 E36 J04 S02 S03
IN CARLOCK, J T; KORKOWSKI, P F; MADER, R A; YAFUSO, M; YAN, C
PA (MINN) MINNESOTA MINING & MFG CO
CYC 1
PI US 5296381 A 19940322 (199414)* 10 G01N021-64 <--
ADT US 5296381 A US 1991-742002 19910808
PRAI US 1991-742002 19910808
IC ICM **G01N021-64**
AB US 5296381 A UPAB: 19960428

A **sensing** element (I) comprises a **matrix** material covalently bonded to **indicator** component(s) (A) capable of providing a signal dependent on the concentration of an analyte in a medium (A) are derived from **indicator** cpd(s). having an aromatic ring directly covalently bonded to gp. including a functional portion which is conjugated relative to the aromatic ring.

A method for producing (I) comprises contacting a compsn. containing precursor(s) of the **indicator** component(s) and a reactable material under conditions to form the **indicator**-bonded **matrix.**

The **matrix** material is pref. a silicone-based **polymer** which is **crosslinked** during the production of (I).

The **indicator** cpd. is a polynuclear aromatic cpd. and includes decacyclene and its derivs., perylene and its derivs.,

benzo(ghi)perylene and its derivs. and/or coronene and its derivs. The functional portion pref. a C=C double bond and opt. includes a heteroatom. The **indicator** cpd. is especially a vinyl benzo(ghi)perylene derivative

USE/ADVANTAGE - The **sensor** is useful for **sensing** the concentration of **gaseous** components such as **oxygen** or **CO2** in a medium such as blood. It is partic. useful in an in vivo blood **oxygen sensor.** Large amts. of covalently attached **indicator** component can be included in the **matrix** material to provide an intense signal, and the **indicator** has a reduced tendency to escape from the **matrix**

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Dwg.0/1

Dwg.0/1

FS CPI EPI

FA AB

MC CPI: B04-B04D5; B04-C03D; B05-C08; B06-H; B08-D02; B08-D03; **B11-C07B3**; B12-K04A

EPI: S02-F04C; S03-E04D; S03-E14H1

L141 ANSWER 27 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN

AN 1994-010442 [02] WPIX

DNN N1994-008381 DNC C1994-004250

TI **Sensor** membrane for optical **sensor** of physical or chemical parameter - with **indicator** comprising ion pair of cationic or anionic dyestuff, and immobilising counter ion compatible with **polymer matrix.**

DC A14 A26 A89 E36 J04 S03

IN KARPF, H; KLIMANT, I; KOVACS, B; LEINER, M J; WOLFBEIS, O S; LEINER, M J P

PA (AVLV) AVL GES VERBRENNUNGSKRAFT & MESSTECHNIK; (AVLV) AVL MEDICAL INSTR AG

CYC 4

PI	EP 578630	A1	19940112	(199402)*	GE 8	G01N021-77	<--
	R: AT DE FR GB						
	AT 9201409	A	19940915	(199436)		G01N031-00	<--
	AT 399402	B	19950315	(199516)		G01N031-00	<--
	EP 578630	B1	19960221	(199612)	GE 11		
	R: AT DE FR GB						
	DE 59301669	G	19960328	(199618)		G01N021-77	<--

ADT EP 578630 A1 EP 1993-890131 19930630; AT 9201409 A AT 1992-1409 19920709; AT 399402 B AT 1992-1409 19920709; DE 59301669 G DE 1993-501669 19930630, EP 1993-890131 19930630

FDT AT 399402 B Previous Publ. AT 9201409; DE 59301669 G Based on EP 578630

PRAI AT 1992-1409 19920709

REP DE 4118681; EP 190830; EP 283206

IC ICM **G01N021-77; G01N031-00**

ICS **G01N021-64; G01N031-22**

AB EP 578630 A UPAB: 19961205

Sensor membrane for an optical **sensor** for determn. of a physical or chemical parameter of a sample (I) has a homogeneous **indicator** substance (II), immobilised in the **polymer matrix** (III) of the membrane. This is in at least indirect contact with (I) and its optical properties change when the parameter under test changes. (II) is in the form of an ion pair, comprising a cationic or anionic dyestuff mol. (IIA) and counterion(s) (IIB) compensating the electrical charge of (IIA).

The novelty is that (IIB) is derived from cpds. containing an ionic gp. and (a) an oligomer gp. of the monomer from which (III) is derived, (b) long-chain alkyl(ene)gps. or (c) silyl gps. has physicochemical properties suited to those of (III) and anchors (IIA) to (III).

USE/ADVANTAGE - The membrane is used for determn. of (I) 02, SO2 or H2O2 concentration by extinction of **fluorescence**; (2) H+ (pH), NH3, **CO2**, or SO2 concentration (3) redox potential; and (4) concentration of ions, e.g. H+, Na+, K+, Ca++, Cl-, Mg++, Pb++, Cd+, UO2++, NO3-, T1+ or Sr++

(claimed). The characteristic properties of (IIA) are not or are only slightly impaired by immobilisation.

In an example, a solution of 226 mg RuCl2.3H2O in a 5ml ethylene glycol and 0.5ml H2O was heated to 160 deg.C under reflux (**colour** change from red-yellow to blue-green) and 860mg solid, 4,7-diphenyl-1,10-phenanthroline (diph) were added at 120 deg.C. After 45 min. reaction at 160 deg.C 1 ml reaction mixture were treated with 10 ml H2O and 2ml acetone. 5ml saturated Na trimethylsilylpropane sulphonate solution were added. The ion pair precipitated from the solution comprising the (tris(4,7-diphenyl-10,10-phenanthroline) Ru(II))2+ = Ru(diph)3 cation with trimethylsilylpropane sulphonate counterion, was filtered, purified and recrystallised from acetone. 5g silicone **prepolymer** ('PS252'; RTM; unfilled one-component silicone, curing at room temperature with evolution of acetic acid in dioxane/THF mixt) were mixed with 5ml 0.001 M solution of the ion pair in CHCl3. The solution was cast on 'Mylar' (RTM) film in a thickness of 30 microns and dried 12h at 90 deg.C in the absence of moisture. The finished membrane was intense yellow in **colour** and intensely **fluorescent** and very **sensitive** to 02.

Dwg.0/0

FS CPI EPI
FA AB; DCN
MC CPI: A12-L04A; E11-Q03L; E31-D02; E31-E; E31-F04; J04-C
EPI: **S03-E04E**
ABEQ EP 578630 B UPAB: 19960322

Sensor membrane of an optical **sensor** for determining a physical or chemical parameter of a sample with an **indicator** substance that is homogeneously immobilised in the **polymer matrix** of the **sensor** membrane and is, at least indirectly, in contact with the sample and will change at least one of its optical properties upon a change of the parameter to be measured, the **indicator** substance being provided as ion pair and consisting of a cationic or anionic **dye** molecule and at least one counterion compensating the electric charge of the **dye** molecule, wherein the counterion is derived from cpds. contg. a ionic gp. and (a) an oligomer residue of the monomer forming the basis of the respective **polymer matrix**, (b) long-chain alkyl or alkene gps. or (c) silyl gps., the counterion having physico-chemical properties matching the physico-chemical properties of the **polymer matrix** and the **dye** molecule being embedded in the **polymer matrix** of this counterion.

Dwg.0/0

L141 ANSWER 28 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
AN 1993-379056 [48] WPIX
DNN N1993-292728 DNC C1993-168256
TI A **microsensor** used to detect e.g. blood pH levels of **oxygen** and **carbon di oxide** - comprising optical fibre having portion on the surface of a light conducting core covered with a layer containing analyte **sensitive dye** material.
DC A14 A89 B04 E24 J04 P31 S03 V07
IN BANKERT, C S; HUI, H K; NELSON, A M
PA (PURI-N) PURITAN BENNETT CORP
CYC 8
PI EP 572157 A1 19931201 (199348)* EN 13 G01N021-77 <--
R: DE FR GB IE IT
US 5266271 A 19931130 (199349) 9 G01N021-64 <--
CA 2095414 A 19931123 (199407) G01N033-52
JP 06058880 A 19940304 (199414) 12 G01N021-77 <--
ADT EP 572157 A1 EP 1993-303857 19930519; US 5266271 A US 1992-887476 19920522; CA 2095414 A CA 1993-2095414 19930503; JP 06058880 A JP 1993-121353 19930524

PRAI US 1992-887476 19920522
REP EP 244929; EP 352610; EP 481740; US 5047627
IC ICM **G01N021-64**; **G01N021-77**; G01N033-52
ICS A61B005-14; G01J001-02; **G01N021-78**; **G01N031-22**
ICA A61B005-00
AB EP 572157 A UPAB: 19940223
An analyte **sensor**, comprises: (i) a **sensor** member having a **sensor** surface; (ii) an analyte **sensing matrix** covalently bonded to said **sensor** surface, the analyte **sensing matrix** including a **copolymer** having first and second monomer portions formed from a selected ratio of a first monomer having a first type of functional group providing a bonding site for covalent bonding to a first **dye indicator** material, and a second monomer having a second type of functional group providing a bonding site for covalent bonding to a second **dye indicator** material and for **cross-linking**; (iii) a first **dye indicator** material covalently bonded to first monomer portion of **copolymer**; (iv) a second **dye indicator** material covalently bonded to a portion of the available bonding sites of second monomer portion of **copolymer**, and (v) a **crosslinking** agent covalently bonded to **sensor** surface and covalently bonded to a remaining portion of the available bonding sites of second monomer portion of **copolymer.**

USE/ADVANTAGE - The **sensor** can be used for measuring multiple parameters such as **oxygen**, **carbon dioxide** and pH of a fluid (such as blood) or **gaseous** mixture. The **dye indicator** materials are covalently bonded to a **copolymer** which is covalently bonded with a **crosslinking** agent to the surface of the core of the optical fibre (see Preferred **Sensor**) to prevent leaching of the **dye indicator** during extended use. The **dye copolymer** is **crosslinked** in situ over the tip of the optical fibre to give an ion perme **sensor** which can be used intravasculary to monitor one or more blood parameters. The use of a blocked **crosslinking** agent also increases the ease of manufacturing the improved **microsensor** by prolonging pot life and allowing for on demand heat curing.

Dwg.2/2
FS CPI EPI GMPI
FA AB; GI; DCN
MC CPI: A12-L04; A12-V03C1; B11-C07; E11-Q03C; E31-D02; E31-N05C
EPI: **S03-E04E**; S03-E09E; S03-E14H1; S03-E14H9; V07-F01A1; V07-N; V07-X
ABEQ US 5266271 A UPAB: 19940126
Analyte **sensor** has an analyte **sensing matrix** (I) covalently bonded to the outer surface of an optical fibre, (I) comprises: (a) a first monomer, pref. hydroxyethyl methacrylate, covalently bonded to a first **dye indicator** and (b) a second monomer, pref. azindynyl ethyl methacrylate, covalently bonded to a second **dye indicator**, pref. hydroxypyrene trisulphonic acid.

A **crosslinking** agent, pref. a polyether isocyanate, is covalently bonded to the surface of the optical fibre and to bonding sites in the second monomer.

USE/ADVANTAGE - For in vivo, intravascular measurement of blood pH, **O2** and **CO2** contents. Leaching of **indicator** material during prolonged use is prevented.

Dwg.1/2

L141 ANSWER 29 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
AN 1993-346656 [44] WPIX
DNN N1993-267761 DNC C1993-153448
TI Mfr. of analyte **sensor** especially for ion permeable optical fibre

micro-**sensors** for blood use - by mixing **crosslinking** agent and inhibitor with liquid **polymeric** analyte **sensing matrix**, prolongs pot life of **matrix.**

DC A14 A26 A89 B04 E19 J04 S02 S03 S05
IN NELSON, A M; SOIKOWSKI, C L
PA (PURI-N) PURITAN BENNETT CORP
CYC 9
PI EP 568274 A1 19931103 (199344)* EN 8 G01N021-77 <--
R: DE FR GB IE IT
US 5262192 A 19931116 (199347) 6 G02B006-22
CA 2093592 A 19931028 (199404) G01N033-84
JP 06074901 A 19940318 (199416) 7 G01N021-77 <--
US 5326585 A 19940705 (199426) 6 G02B006-22
ADT EP 568274 A1 EP 1993-303162 19930422; US 5262192 A US 1992-874031 19920427; CA 2093592 A CA 1993-2093592 19930407; JP 06074901 A JP 1993-101143 19930427; US 5326585 A Cont of US 1992-874031 19920427, US 1993-108108 19930817
FDT US 5326585 A Cont of US 5262192
PRAI US 1992-874031 19920427
REP EP 263692; EP 481740; US 4842783; WO 9105513
IC ICM **G01N021-77**; G01N033-84; G02B006-22
ICS A61B005-14; B05D005-06; **G01N021-64**; **G01N021-78**; G01N033-52

AB EP 568274 A UPAB: 19931213
Making an analyte **sensor** having a substrate surface and a **polymeric** analyte **sensing matrix** including a **dye indicator** material, by: preparing a liquid polyemric analyte **sensing matrix**; mixing with a **crosslinking** agent and a **crosslinking** inhibitor removable by elevated temperature exposure; applying to the substrate surface; and exposing to elevated temperature for sufficient time to remove the inhibitor, allowing **crosslinking** of the **sensing matrix** in situ. The method may further include applying a layer of uncured overcoat mixture of **crosslinking** agent and **crosslinking** inhibitor removable by elevated temperature exposure over the **sensing matrix** after curing; and exposing to elevated temperature for sufficient time to remove the inhibitor, permitting **crosslinking** of the overcoat mixture in situ.

USE/ADVANTAGE - The **sensors** are useful for chemical and biomedical analysis of fluid or **gaseous** mixts., especially ion permeable optical fibre **microsensors** for measuring blood constituents, e.g. **O2**, **CO2**, and pH. The **crosslinking** behaviour of the **sensing matrix** can be closely controlled, significantly facilitating automation of mfr. The **crosslinking** inhibitor prolongs pot life of the analyte **sensing matrix** and overcoat mixts.

Dwg.0/0

FS CPI EPI
FA AB; DCN
MC CPI: A08-C01; A08-D01; A11-B05; A11-C02C; A12-L04; A12-V03C2; B04-B04D5; B04-C03; B05-C04; B05-C08; B06-A03; B08-A; B08-C01; B11-C07B1; B12-K04; E11-Q03; E31-A02; E31-N05C; J04-B01
EPI: S02-F04C; S03-E03X; S03-E04D; **S03-E04E**; S03-E14H1; S05-C01; S05-C09; S05-D01G

ABEQ US 5262192 A UPAB: 19940111
Mfr. comprises: i) preparing a **copolymer** of hydroxyethyl methacrylate and N-(3-aminopropyl)methacrylate and covalently bonding **dye indicator** to **copolymer** to form a liq. **polymer** analyte **sensing matrix**; ii) forming a liq. mixt. of liq. **polymeric** analyte **sensing matrix** with a **crosslinking** agent and a **crosslinking** inhibitor which can be removed; iii) **coating** the optical fibre surface with liq. mixt.; and iv) heating the liq. mixt.

on the optical fibre surface for sufficient time to remove the **crosslinking** inhibitor from the liq. mixt.. **Crosslinking** agent **crosslinks** the liq. **polymeric** analyte **sensing matrix** in situ on the optical fibre surface to produce a curved **sensing matrix. Crosslinker** comprises a blocked polyether isocyanate.

USE/ADVANTAGE - In an analyte **sensor** including an optical fibre having a surface portion covered with a **polymer** analyte including a **dye indicator.**

ABEQ US 5326585 A UPAB: 19940817
Prepn. of an analyte **sensor** ind. an optical fibre with a surface covered in a **sensing matrix** contg. a **dye** comprises:- (a) preparing an analyte-permeable **polymer** with a **dye** covalently bonded to form a liquid **matrix**; (b) forming a mixt. of the **matrix** with a **crosslinking** agent and an inhibitor; (c) **coating** optical fibre surface with the mixt.; and (d) heating to remove **crosslinking.**

USE - Used to intravascularly monitor pH or partial pressures of **O2** or **CO2** in blood.
Dwg.0/0

L141 ANSWER 30 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
AN 1993-303642 [38] WPIX
DNC C1993-135298
TI **Crosslinked gas**-permeable membrane - comprises **gas-sensitive indicator** incorporated into cured perfluorinated urethane **copolymer matrix**, used in optical **gas sensors.**
DC A25 A89 J04
IN OLSTEIN, A
PA (OPTI-N) OPTICAL SENSORS INC
CYC 20

PI	WO 9318391	A1	19930916 (199338)*	33	G01N021-17	
	RW: AT BE CH DE DK ES FR GB GR IE IT LU MC NL PT SE					
	W: AU CA JP					
	AU 9337831	A	19931005 (199405)		G01N021-17	
	EP 630469	A1	19941228 (199505) EN		G01N021-17	
	R: DE FR GB IT					
	JP 07507136	W	19950803 (199539)	11	G01N021-78	<--
	US 5453248	A	19950926 (199544)	11	G01N021-64	<--
	EP 630469	A4	19951122 (199626)		G01N021-17	
	AU 669515	B	19960613 (199631)		G01N021-78	<--
	US 5631340	A	19970520 (199726)	8	C08G018-58	

ADT WO 9318391 A1 WO 1993-US1827 19930226; AU 9337831 A AU 1993-37831 19930226; EP 630469 A1 EP 1993-907111 19930226, WO 1993-US1827 19930226; JP 07507136 W JP 1993-515815 19930226, WO 1993-US1827 19930226; US 5453248 A CIP of US 1992-848627 19920309, US 1992-911175 19920812; EP 630469 A4 EP 1993-907111 ; AU 669515 B AU 1993-37831 19930226; US 5631340 A CIP of US 1992-848627 19920309, Div ex US 1992-911175 19920812, US 1995-396632 19950301
FDT AU 9337831 A Based on WO 9318391; EP 630469 A1 Based on WO 9318391; JP 07507136 W Based on WO 9318391; AU 669515 B Previous Publ. AU 9337831, Based on WO 9318391
PRAI US 1992-911175 19920812; US 1992-848627 19920309; US 1995-396632 19950301
REP US 4321057; US 4508916; US 4816130; US 5004790; US 5151535; EP 279576; EP 352610; US 4842783; US 4994396; US 5054882
IC ICM C08G018-58; G01N021-17; **G01N021-64**; **G01N021-78**
ICS B01D071-32; C08L075-08
AB WO 9318391 A UPAB: 19931123
A **crosslinked gas**-permeable membrane (I), useful in optical **gas sensors** (II) for measuring **O2** or **CO2** in a fluid, comprises: a cured perfluorinated urethane

copolymer matrix (III) which incorporates a **gas -sensitive indicator** component (IV).

Also claimed are: (A) (II), which comprises an optical waveguide (V) having a distal end portion (Va), which incorporates (I) and monitors a **gas** component within a fluid, and a proximal end (VI) for communication, with means for receiving signals from (Va); and (B) a method for making (II) which involves **coating** (Va) with a solution containing a photocurable **polymeric** precursor and (IV). The precursor is **crosslinked** by irradiating (Va) through (V), with a suitable wavelength.

USE/ADVANTAGE - (I) is used for detecting and measuring dissolved **gases** e.g. **O2** and **CO2** in the bloodstream. Other applications include on-line **sensing** of a flowing fluid stream. (II) has improved **sensitivity**, resolution, solvent resistance, photostability and resistance to shear.

9

Dwg.1/3

FS CPI

FA AB; GI

MC CPI: A05-G01E; A11-B05D; A11-C02B; A12-E11; A12-E13; A12-V03C2; J01-E03E; J04-C04

ABEQ US 5453248 A UPAB: 19951109

The **crosslinked gas** permeable membrane for optical **gas sensors** for measuring **O2** or **CO2** in a fluid, comprises a **polymeric matrix** of a cured perfluorinated urethane **polymer**, the **matrix** having a **gas-sensitive indicator** component incorporated in it, where the cured perfluorinated urethane **polymer** comprises 95-99.5 wt.% of a perfluorinated urethane **polymer** precursor **crosslinked** with 0.5-5 wt.% of a **crosslinking** agent, and further where the precursor has the general formula OCN-Ar-NH-C(=O)--O-X-C(=O)-NH-Ar-NCO.

Ar is a monocyclic aromatic moiety; and X is a perfluorinated polyether linkage contg. 2-100 recurring perfluorinated mer units having the structure -(CF2O)- and/or -(CF2CF2O)-.

Pref. the **crosslinking** agent is water.

Pref. the **gas-sensitive indicator** is **fluorescein**, **carboxyfluorescein**, seminaphthorhodafluor, semi-**naphthofluorescein**, **naphthofluorescein**, hydroxypyrem trisulphonic acid and **dichlorofluorescein**.

USE/ADVANTAGE - The membrane is for use as **gas sensors**. 9- to 10-fold increase in life is obtd.

Dwg.0/3

ABEQ US 5631340 A UPAB: 19970626

A cured perfluorinated urethane **polymer** prepared by the process which comprises **cross-linking** a perfluorinated urethane **polymer** precursor having the structural formula OCNArNHOCOXOCNHArNCO (I) wherein Ar is a monocyclic aromatic moiety and X is a perfluorinated polyether linkage containing approximately 2 to 100 recurring perfluorinated mer units having the structure <code +545>CF2O<code +546>, <code +545>CF2CF2O<code +546>, or combinations thereof, with a **cross-linking** agent selected from the group consisting of water, diols of the formula HO-R-OH wherein R is alkylene of 1 to 6 carbon atoms, bisphenol A and hexafluorobisphenol A, wherein the **cross-linking** agent is present such that, it represents on the order of 0.5 to 5 wt. % of the cured perfluorinated urethane **polymer**.

Dwg.1/3

L141 ANSWER 31 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN

AN 1992-351419 [43] WPIX

CR 1998-217281 [19]; 2002-597712 [64]; 2003-447312 [42]

DNN N1992-267939 DNC C1992-155934

TI Detecting **respiring** microorganisms in fluid - using **fluorescent** cpd. which exhibits reduction in **fluorescent** intensity in the presence of **oxygen.**

DC B04 D16 S03

IN BURRELL, G J; HU, K; MONTHONY, J F; SAPITOWICZ, R; STITT, D T

PA (**BECT**) **BECTON DICKINSON CO**; (**BECT**) **BECTON DICKINSON & CO**

CYC 8

PI	EP 509791	A1	19921021 (199243)*	EN	23	C12Q001-00
	R: DE FR GB IT					
	AU 9214829	A	19921022 (199250)			C12Q001-04
	CA 2066329	A	19921019 (199302)			C12Q001-04
	JP 05137596	A	19930601 (199326)		18	C12Q001-04
	AU 647609	B	19940324 (199417)			C12Q001-04
	JP 07073510	B2	19950809 (199536)		18	C12Q001-04
	EP 509791	B1	19960703 (199631)	EN	22	C12Q001-00
	R: DE FR GB IT					
	DE 69211895	E	19960808 (199637)			C12Q001-00
	US 5567598	A	19961022 (199648)		18	C12Q001-18
	CA 2066329	C	20000620 (200043)	EN		C12Q001-04

ADT EP 509791 A1 EP 1992-303391 19920415; AU 9214829 A AU 1992-14829 19920410; CA 2066329 A CA 1992-2066329 19920416; JP 05137596 A JP 1992-98368 19920418; AU 647609 B AU 1992-14829 19920410; JP 07073510 B2 JP 1992-98368 19920418; EP 509791 B1 EP 1992-303391 19920415; DE 69211895 E DE 1992-611895 19920415, EP 1992-303391 19920415; US 5567598 A Cont of US 1991-687359 19910418, US 1993-25899 19930303; CA 2066329 C CA 1992-2066329 19920416

FDT AU 647609 B Previous Publ. AU 9214829; JP 07073510 B2 Based on JP 05137596; DE 69211895 E Based on EP 509791

PRAI US 1991-687359 19910418; US 1993-25899 19930303

REP DE 3346810; EP 333253; EP 448923

IC ICM C12Q001-00; C12Q001-04; C12Q001-18
ICS C12M001-34; G01N021-62; **G01N021-64**; **G01N021-78**

AB EP 509791 A UPAB: 20030703

(A) A method for detecting the presence of **respiring** microorganisms in a fluid is claimed, comprising (a) contacting the fluid with a **sensor** compsn. which comprises a **fluorescent** cpd. (FC) that exhibits a reduction in **fluorescent** intensity when irradiated with light contg wavelengths which cause the cpd. to **fluoresce** upon exposure to **oxygen**, (b) irradiating the **sensor** compsn. with light containing wavelengths which cause the FC to **fluoresce.** (c) measuring or visually observing the **fluorescent** light intensity from the FC and (d) comparing the measurement to that of a control not containing a **respiring** microorganism, where an increase in **fluorescent** intensity is **indicative** of the presence of **respiring** microorganisms. The FC may be tris-4,7-diphenyl-1,10-phenanthroline ruthenium (II) salts or tris-2,2'-bipyridyl ruthenium (II) salts.

Also claimed are (B) a method of determining the effect of an antibiotic or antimicrobial compsn. on a **respiring** microorganism, comprising (a) preparing a broth of the microorganism, (b) contacting the broth with a **sensor** compsn. as in (A) (c) admixing with the broth, a quantity of the antibiotic or antimicrobial compsn. (d) irradiating the **sensor** compsn. with light containing wavelengths which cause the FC to **fluoresce**, (e) measuring or visually observing the intensity of **fluorescent** light from the FC and (f) comparing the measurement to that of a negative control not in contact with **respiring** microorganisms, where an increase in **fluorescent** intensity relative to the control is **indicative** of the presence of **respiring** organisms, thereby **indicating** the ineffectiveness of the quantity of the antibiotic or antimicrobial compsn.

USE/ADVANTAGE - The method can be used for the rapid measurement

and/or detection of **respiring** microorganisms. The method can also be used to detect the presence of **O2** dependent compsns. such as enzymes. It can also be used to test the susceptibility of a microorganism to a cpd. such as an antibiotic.
Dwg.1/6
FS CPI EPI
FA AB; GI; DCN
MC CPI: B04-B02B; B04-B02C; B05-A03B; B06-D15; B07-D04C; **B11-C07B3**; B11-C08E1; B12-K04; D05-H09
EPI: S03-E04D; S03-E14H5

L141 ANSWER 32 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
AN 1992-216281 [26] WPIX
CR 1987-300757 [43]; 1988-100087 [15]; 1988-100088 [15]; 1989-317836 [44]; 1990-163538 [21]; 1991-124840 [17]; 1992-023800 [03]
DNN N1992-164234 DNC C1992-097915
TI **Sensor** for **sensing** concentration of a component in blood - using an **indicator** encased in a component permeable **polymeric matrix** in rigid sleeve.
DC A89 B04 S03
IN GOURLEY, T H; HACKER, T G; MAXWELL, T P; MILLER, W W; YAFUSO, M
PA (MINN) MINNESOTA MINING & MFG CO
CYC 1
PI US 5120510 A 19920609 (199226)* 8 G01N021-64 <--
ADT US 5120510 A CIP of US 1986-853460 19860418, Cont of US 1986-917913 19861010, CIP of US 1987-49844 19870515, CIP of US 1987-91433 19870831, Cont of US 1988-206189 19880613, US 1990-624200 19901206
FDT US 5120510 A CIP of US 4798738, CIP of US 4824789, CIP of US 4919891, Cont of US 5006314
PRAI US 1988-206189 19880613; US 1986-853460 19860418;
US 1986-917913 19861010; US 1987-49844 19870515;
US 1987-91433 19870831; US 1990-624200 19901206
IC ICM **G01N021-64**
AB US 5120510 A UPAB: 19961004
Indicator material for providing a signal which depends on the concentration of a predetermined component in blood is encased in a blood component permeable solid **polymeric matrix** to form a **sensing** element (18), which is sized so as to be positioned within a blood vessel of a patient. The **sensing** element is positioned at the end of an elongate signal transmission device (12) with a sleeve (19) secured to the end of the signal transmission device to extend distally thereof to form a pocket in which the **sensing** element is mounted.
Signal transmission device (12) is an optical fibre and the sleeve (19) is of glass. The **indicator** is a **fluorescence indicator.** The sleeve (19) is secured to the optical fibre by an adhesive (16) containing additional amounts of **indicator** material and the assembly is provided with an overcoating of blood insoluble, component permeable **polymeric** material with an effective amount of an opaque agent. The fibre (12) can be provided with a **coating** (22) sealed to the assembly with material (24) which can be the same as overcoating (20).
USE/ADVANTAGE - Partic. as a **sensor** to be positioned in a vein or artery of a patient to measure the presence of **oxygen**, **carbon dioxide**, hydrogen ions, electrolytes, glucose, etc. in blood. Rigid sleeve (19) reinforces the junction between the transmission device, e.g. an optical fibre, and the **sensing** element to ensure accurate and consistent measurements.
1/4
Dwg.1/4
Dwg.1/4
FS CPI EPI
FA AB; GI; DCN

MC CPI: A12-L03A; A12-V03C2; B04-B04D5; B04-C03; B05-C04; B05-C08; B10-A07; B11-C04; **B11-C07B3**; B12-K04A
EPI: S03-E04D; S03-E04X; S03-E14H1

L141 ANSWER 33 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
AN 1992-105989 [14] WPIX
DNN N1992-079431 DNC C1992-049506
TI Appts. for monitoring blood **gas** concns. - comprising optical fibre.
DC J04 P31 S03
IN HUSS, B D; KHALIL, G; PIHL, R J; VUREK, G G; YIM, J B; KHALIL, G E
PA (ABBO) ABBOTT LAB
CYC 17
PI EP 477501 A 19920401 (199214)* 17
R: AT BE CH DE DK ES FR GB IT LI NL SE
US 5098659 A 19920324 (199215) 13
AU 9181502 A 19920326 (199222) G01N031-22 <--
CA 2050738 A 19920325 (199223) G01N021-64 <--
JP 04305143 A 19921028 (199250) 13 G01N021-77 <--
EP 477501 A3 19920708 (199334)
AU 646278 B 19940217 (199412) G01N031-22 <--
ADT EP 477501 A EP 1991-112874 19910731; US 5098659 A US 1990-587234 19900924; AU 9181502 A AU 1991-81502 19910730; CA 2050738 A CA 1991-2050738 19910905; JP 04305143 A JP 1991-240927 19910920; EP 477501 A3 EP 1991-112874 19910731; AU 646278 B AU 1991-81502 19910730
FDT AU 646278 B Previous Publ. AU 9181502
PRAI US 1990-587234 19900924
REP No-SR.Pub; 2.Jnl.Ref; EP 352610; EP 357586
IC ICM **G01N021-64**; **G01N021-77**; **G01N031-22**
ICS A61B005-14; G01N021-31; G01N021-63; G01N021-76; G01N021-84; G01N033-497
AB EP 477501 A UPAB: 19931119
Probe for monitoring a plurality of chemical parameters comprising (a) an optical fibre having a longitudinal axis along which light signals at a number of wavelengths are propagated bidirectionally; (b) an optical **sensor** attached adjacent to a distal end of the optical fibre and comprising a first analyte **indicator**, light signals of a first wavelength being absorbed by the first analyte **indicator** to an extent dependent upon the amount of the first analyte present; and (c) a **polymer matrix** material in which a second analyte **indicator** is provided, being disposed adjacent to the distal end of the optical fibre and adjacent the optical **sensor**, light signals of the second wavelength transmitted to the distal end of the optical fibre exciting the second analyte **indicator** to emit light, a decay time of the light emission varying in response to a concentration of the second analyte.
USE - For monitoring chemical analyte concns. in blood e.g. **O2**, **CO2**, and pH.
3/7
FS CPI EPI GMPI
FA AB; GI; DCN
MC CPI: A12-L03A; A12-L04; A12-V03C2; B04-B04D5; B04-C03; B05-C04; B05-C08; B06-D18; B10-A09B; B11-C07B4; B12-K04A; J04-C04
ABEQ US 5098659 A UPAB: 19931006
A probe for monitoring chemical parameters comprises an optical fibre with a longitudinal axis along which light signals at various wavelengths are propogated bidirectionally. An optical **sensor** is attached to a distal end of the fibre. The **sensor** consists of a first analyte **indicator** which absorbs light signals of a first wavelength to an extent dependent on the amt. of a first analyte present.
A **polymer matrix** material is disposed adjacent the fibre distal end adjacent the optical **sensor.** A second

analyte **indicator** is provided in the **matrix.** Light signals of a second wavelength are transmitted to the distal end of the fibre, exciting the second analyte **indicator** to emit light whose decay time varies in response to the concn. of the second analyte.

USE - The appts. is esp. for blood **gas** monitoring. Pref. the first measured parameter is **carbon dioxide** and the second hydrogen ion concn. expressed as a pH level. Alternatively **oxygen** content may be monitored.

1/7

L141 ANSWER 34 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
AN 1991-317410 [43] WPIX
CR 1992-415315 [50]
DNN N1991-243243 DNC C1991-137218
TI Multiple optical fibre event **sensor** - having **gas sensors** in staggered relation in hydrophobic semipermeable **polymeric matrix** in a semipermeable tubular sleeve.
DC A96 B04 J04 P31 P81
IN RICCITELLI, S D; SHERN, T A
PA (PURI-N) PURITAN-BENNETT; (PURI-N) PURITAN-BENNETT COR
CYC 15
PI US 5054882 A 19911008 (199143)*
EP 471519 A 19920219 (199208)
R: AT BE CH DE ES FR GB GR IT LI LU NL SE
CA 2048869 A 19920211 (199218)
CA 2048892 A 19920211 (199218)
ADT US 5054882 A US 1990-565496 19900610; EP 471519 A EP 1991-307347 19910809
PRAI US 1990-565495 19900810
REP EP 336985; EP 352610; US 4727730
IC A61B005-00; **G01N021-64**; G01N021-84; G02B006-16
AB US 5054882 A UPAB: 19930928
Number of optical fibre **gas sensors** (16a,b,c) each having a distal end bearing a **sensor** module (14a,b,c) are disposed in axially staggered relation within a tubular semipermeable sleeve (12) with the **sensor** modules being surrounded and fixed in position by a semipermeable **polymeric matrix** (18) which fills the sleeve and which is hydrophobic in the portion surrounding the **sensor** modules. The **polymeric matrix** has a rounded tip extending beyond the distal end of the sleeve.

Pref. the **sensors** include a blood **oxygen** and blood **carbon dioxide sensors** which are disposed within a hydrophobic **polymeric matrix** portion of silicone and a blood pH **sensor** (14a) disposed in a **matrix** portion (19) of hydrophilic hydrogel or polyurethane. The tubular sleeve (12) is of silicone and has a wall thickness of less than 0.002 inch. A temperature **sensor** (22) can be included within the sleeve.

USE/ADVANTAGE - Used as a multiple event **sensor** for performing analysis of multiple analytes, e.g. the acidity (pH) and tension or partial pressure of **CO2** or **O2** in blood to determine the **respiratory** state of a patient. Provides a multiple event **sensor** which is easily mfd., shaped to avoid thrombogenicity and structurally sound to withstand intravascular placement.

1/2
FS CPI GMPI
FA AB; GI; DCN
MC CPI: A12-V03B; A12-V03C2; B04-B04D5; B04-C03D; B05-C04; B05-C08; B11-C08; B12-K04A; J04-C04

L141 ANSWER 35 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
AN 1991-283076 [39] WPIX
DNN N1991-216498 DNC C1991-122595

TI **Gas sensing** element - comprises **sensing** compsn. in **polymer matrix** between glass disc and opaque, **gas** permeable film layer.

DC A89 B04 J04 P31 P42 S03

IN HACKER, T G; HOLODY, M Z; MAXWELL, T P; YAFUSO, M

PA (MINN) MINNESOTA MINING & MFG CO; (MINN) MINNESOTA MINING MFG CO

CYC 6

PI

EP 448052	A	19910925 (199139)*				
US 5175016	A	19921229 (199303)		10	G01N001-00	
JP 05072202	A	19930323 (199316)		9	G01N033-49	
EP 448052	A3	19920226 (199324)				
US 5284775	A	19940208 (199407)		9	G01N033-50	
EP 448052	B1	19961218 (199704)	EN	11	G01N021-77	<--
R: DE FR GB IT						
DE 69123619	E	19970130 (199710)			G01N021-77	<--

ADT EP 448052 A EP 1991-104251 19910319; US 5175016 A US 1990-496560 19900320; JP 05072202 A JP 1991-54727 19910319; EP 448052 A3 EP 1991-104251 19910319; US 5284775 A Div ex US 1990-496560 19900320, US 1992-949771 19920921; EP 448052 B1 EP 1991-104251 19910319; DE 69123619 E DE 1991-623619 19910319, EP 1991-104251 19910319

FDT US 5284775 A Div ex US 5175016; DE 69123619 E Based on EP 448052

PRAI US 1990-496560 19900320

REP NoSR.Pub; 1.Jnl.Ref; EP 344313; JP 01314951; US 31879; US 4557900; US 4798738; US 4824789; US 4849172; US 4851195; WO 8805533

IC ICM G01N001-00; **G01N021-77**; G01N033-49; G01N033-50
ICS A61B005-14; B05D001-36; G01N021-31; **G01N021-64**

AB EP 448052 A UPAB: 19940715

Gas sensing element comprises a **gas sensing** compsn. (22) between a transparent **gas** impermeable solid disc (14) and an opaque, **gas** permeable film (21). The **gas sensing** compsn. comprises a **sensing** component in a **gas** and light permeable **polymer.** The element is sized to fit in a cavity (24) in a **sensor** holder (30).

Pref. the disc is made of glass and the film is pref. an opaque agent and a **polymer** such as a polyfluorohydrocarbon, a polyfluorocarbon, mixts. thereof or especially PTFE. Pref. the **sensing** compsn. is a **crosslinked** silicon **polymer** with the **sensing** component dissolved in an aqueous liquid and dispersed throughout.

USE/ADVANTAGE - The **sensor** is used for detecting **CO2** or **O2** amts. in blood. Different **sensing** elements can be used with the same hardware part. @(10pp Dwg.No.2/3)@

2/3

FS CPI EPI GMPI

FA AB; GI; DCN

MC CPI: A12-V03B; A12-V03C2; B04-B04D5; B04-C03B; B04-C03D; B04-D02; B05-C04; B05-C08; B11-C08; B12-K04A; J04-C04
EPI: S03-E04A9; S03-E04D; S03-E14H1

ABEQ US 5175016 A UPAB: 19930928

A **gas** concn. **sensing** element is made by placing **sensing** compsn. precursor (22) between and in contact with a transparent **gas**-impermeable solid disc (14) and an opaque **gas**-permeable film (21), the composition including **sensing** component and **polymer** precursor, then reacting the precursor. The disc is pref. of glass and the film is of fluorocarbon **polymer**, partic. PTFE, and an opacifying agent.

The precursor pref. includes a **crosslinking** agent and the **sensing** component is dissolved in aq. liq. dispersed in the **polymer**, with hydroxyethyl cellulose to keep the liq. dispersed. The aq. liq. may have a pH of 6-8 and the element is for **sensing** **CO2** in blood. Alternatively, the element is for **sensing** blood **oxygen.**

ADVANTAGE - Provides reliable and consistent determinations with reduced tendency to drift, and can be produced in less time and less expensively.
1/3

ABEQ US 5284775 A UPAB: 19940329
Sensing compsn. precursor comprises a dispersed aq. liq. contg dissolved **sensing** cpd., **polymer** precursor and a hydrophilic dispersing agent to maintain dispersed state. Dispersing agent comprises hydroxyalkyl cellulose(s).
Polymer precursor comprises vinyl-terminated dimethyl **siloxane**; **sensing** compsn precursor also includes a **crosslinking** agent; and **sensing** cpd comprises hydroxypyrene trisulphonic acid (derivs).
USE/ADVANTAGE - Used to **sense** concn. of **CO2** in blood. Cost of producing non-specification **sensing** element is reduced.
Dwg.3/3

ABEQ EP 448052 B UPAB: 19970122
A method for making a **gas sensing** element useful in **sensing** the concn. of the **gas** in a medium comprising (a) placing **sensing** compsn. precursor between and in contact with a transparent **gas** impermeable solid disc and an opaque **gas** permeable film oppositely disposed from the transparent **gas** impermeable solid disc, the **sensing** compsn. precursor comprising a **sensing** component and a **polymer** precursor, and thereafter (b) forming from the **sensing** compsn. precursor, a **sensing** compsn. including **gas** permeable and light permeable **polymeric** material and the **sensing** component, the forming including reacting the **polymer** precursor, the combination comprising at least a portion of the **sensing** compsn., the transparent, **gas** impermeable solid disc and at least a portion of the opaque, **gas** permeable film being referred to as a **gas sensing** element.
Dwg.3/3

L141 ANSWER 36 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
AN 1990-289818 [38] WPIX
DNN N1990-223059 DNC C1990-125094
TI Optical **sensor** of concentration of component in medium - in which reservoir supplied additional optical **indicator** to **sensor.**
DC A96 B04 J04 S03 S05 V07
IN HACKER, T G; HUI, H K; MAXWELL, T P; MILLER, W W; YAFUSO, M; YAN, C F
PA (MINN) MINNESOTA MINING & MFG CO
CYC 1
PI US 4954318 A 19900904 (199038)*
ADT US 4954318 A US 1987-91432 19870831
PRAI US 1987-91432 19870831
IC **G01N021-77**
AB US 4954318 A UPAB: 19930928
Optical **sensor** (18) includes an optical **indicator** which provides an optical signal which varies according to the concentration of a component in a medium, and a signal receiver device receives optical signal from the **sensor.** A supply device (16) positioned adjacent the optical **sensor**, provides additional optical **indicator** to the **sensor.**
Pref. device comprises a component permeable silicone **polymeric matrix** (18) which holds a **fluorescence** or absorbence **indicator** mounted on the end of an optical fibre (12).
USE/ADVANTAGE - In the measurement of the concentration of a specific component in a medium partic. in the measurement of **oxygen** concentration in blood. Optical **indicator** can be lost during mfr. and

use of the **sensor.** By providing a reservoir the **sensors** are more consistent and reliable over a period of time.
1/4
FS CPI EPI
FA AB; GI; DCN
MC CPI: A12-V03C2; B04-B04D5; B05-C04; B05-C08; B10-A07; B11-C07B2; B12-K04A; J04-B01
EPI: **S03-E04E**; S05-D01X; V07-X

L141 ANSWER 37 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
AN 1990-052730 [08] WPIX
DNN N1990-040634 DNC C1990-022788
TI Fibre-optic **sensor** for monitoring physiological analyte - has **indicator** molecule covalently bound to **polymer** fixed to fibre tip.
DC A14 A89 B04 J04 P31 P64 P81 S03 S05 V07
IN IYER, L M; LYON, K S; YIM, J B; LYER, L M
PA (ABBO) ABBOTT LAB
CYC 10
PI EP 352610 A 19900131 (199008)* EN 18
R: DE FR GB IT
AU 8938262 A 19900125 (199010)
US 4925268 A 19900515 (199024)
JP 02161338 A 19900621 (199031)
US 5000901 A 19910319 (199114)
US 5127077 A 19920630 (199229) 13 G02B006-00
AU 633498 B 19930204 (199312) G01N033-50
CA 1329017 C 19940503 (199423) A61B005-00
ADT EP 352610 A EP 1989-113197 19890719; US 4925268 A US 1988-224620 19880725; JP 02161338 A JP 1989-192464 19890725; US 5000901 A US 1990-491336 19900309; US 5127077 A Div ex US 1988-224620 19880725, Cont of US 1990-491336 19900309, US 1990-629988 19901218; AU 633498 B AU 1989-38262 19890719; CA 1329017 C CA 1989-606579 19890725
FDT US 5127077 A Div ex US 4925268, Cont of US 5000901; AU 633498 B Previous Publ. AU 8938262
PRAI US 1988-224620 19880725
REP 2.Jnl.Ref; A3...9048; DE 2705370; DE 3001669; EP 205232; No-SR.Pub; US 4200110; US 4434249; WO 8603004; WO 8700920
IC ICM G01N033-50
ICS A61B005-00; B28B001-14; G01N021-75; **G01N021-77**; G01N033-84; G02B006-02
AB EP 352610 A UPAB: 19930928
Sensor for monitoring physiological analyte concentration comprises an analyte-permeable **matrix** placed in the light path defined by the axial core at one end of an optical fibre segment. The **matrix** comprises an **indicator** mol. covalently linked to a **polymer**, the **indicator** being capable of responding to the analyte in an optically detectable manner, and the **polymer** being a **copolymer** of (i) methyl methacrylate (MMA)/methacrylamidopropyl trimethylammonium chloride (MAPTAC), (ii) N-vinylpyrrolidone/p-aminostyrene, (iii) MMA/hydroxymethyl methacrylate, (iv) MMA/N-vinylpyrrolidone, or (v) MMA/acrylic acid. Multi-variable probe comprises a number of the **sensors**, the analyte-permeable **matrices** of the **sensors** being disposed in coterminal
USE/ADVANTAGE - Useful for measuring blood pH, PO2 and/or PCO2. Drift-free performance is obtd. with analyte-permeable **matrices** of thickness below 70 microns. The **sensor** may be mass-produced.
3/4
FS CPI EPI GMPI
FA AB; GI; DCN
MC CPI: A12-L03A; A12-L04; A12-V03C2; B04-B04D5; B04-C03A; B04-C03B; B05-C04; B05-C08; B06-A02; B06-A03; B06-C; B11-C07B2; B12-K04A2; J04-C04
EPI: **S03-E04E**; S03-E14H; S05-C; V07-X

ABEQ US 4925268 A UPAB: 19930928
Fibre optic **sensor** comprises an **indicator** gp. covalently linked to a **polymer matrix**, e.g. methyl methacrylate/methacrylamidopropyl trimethylammonium chloride, N-vinylpyrrolidone/4-aminostyrene, methyl methacrylate/hydroxy-methyl methacrylate, methyl methacrylate/N-vinylpyrrolidone and methy methacrylate/acrylic acid **copolymers**, which are permeable to aq. analytes, mounted in the light path of an optical fibre segment. A specific analyte diffuses into the **polymer matrix** and reacts with the **indicator** gp., giving a change in optical properites of the system which is related to the concn. of the analyte.
USE - The prods. are microelectrodes for monitoring physiological fluids, opt. in vivo for rapid clinical analysis and diagnosis.

ABEQ US 5000901 A UPAB: 19930928
Mfg. a fibre optic **sensor** comprises (a) casting a **polymer** film of uniform thickness which is permeable to an analyte in soln., (b) cutting the film to produce a disc shaped **indicator matrix** of uniform thickness and (c) affixing the **indicator matrix** to 1 end of an optical fibre segment. The **polymer** film comprises a covalently linked or admixed **indicator** molecule which can respond to the analyte in an optically detectable manner.
The **polymer** pref. comprises e.g. methyl methacrylate methacrylamido propyltrimethylammonium chloride. The **polymer** film is cast on a thin film of reflective material comprising Au, TiO2, ZnO or BaSO4.
USE/ADVANTAGE - Drift free fibre optic **sensor** is used for monitoring physiological analyte concn. (claimed).

ABEQ US 5127077 A UPAB: 19930928
Optical fibre **sensor** for monitoring physiological analytes in soln. comprises a **matrix** contg. an **indicator** bonded to or mised with a **polymer** carrier, that is permeable to the analyte and mounted in the light path along the axis of the fibre core, such that when analyte permeates into the **matrix**, the reaction with the **indicator** can be measured by the change in an optical property of the system.
USE - The prods. are suitable for the rapid determination of pH and dissolved **gases** in blood.
4/4

L141 ANSWER 38 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
AN 1989-332544 [46] WPIX
DNN N1990-028716 DNC C1990-016275
TI Optical **sensor** for determn. of properties of liquid or **gaseous** sample - with carrier particles containing immobilised **fluorescent indicator** fixed partly in bonding layer on **polymer** support.
DC A89 J04 P81 S03
IN LEINER, M; WEISS, L; WOLFBEIS, O S; LEINER, M J
PA (AVLV) AVL AG; (AVLV) AVL LIST GMBH; (AVLV) AVL MEDICAL INSTR AG; (AVLL-N) AVL LIST GMBH
CYC 8

PI	AT 8801974	A	19891015 (198946)*		6		
	EP 354204	A	19900207 (199006)B	GE			
	R: DE FR GB						
	DK 8903763	A	19900205 (199015)				
	JP 02167448	A	19900627 (199032)				
	US 5114676	A	19920519 (199223)		5	G01N021-00	
	JP 06082100	B2	19941019 (199440)		5	G01N021-78	<--
	EP 354204	B1	19950405 (199518)	GE	9	G01N021-64	<--
	R: DE FR GB						
	DE 58909153	G	19950511 (199524)			G01N021-64	<--

ADT EP 354204 A EP 1989-890202 19890731; JP 02167448 A JP 1989-203709 19890804; US 5114676 A US 1989-386151 19890728; JP 06082100 B2 JP

1989-203709 19890804; EP 354204 B1 EP 1989-890202 19890731; DE 58909153 G DE 1989-509153 19890731, EP 1989-890202 19890731
FDT JP 06082100 B2 Based on JP 02167448; DE 58909153 G Based on EP 354204
PRAI AT 1988-1974 19880804
REP A3...9127; DE 3148830; DE 3343636; No-SR.Pub
IC C12M001-34; C12M001-40; **G01N021-64**; G02B006-02
ICM **G01N021-78**
ICS C12M001-34; C12M001-40; **G01N021-64**; **G01N021-77**; G01N021-80; **G01N031-22**; G02B006-02
AB AT 8801974 A UPAB: 19950425
In an optical **sensor** for determn. of at least one parameter of a liquid or **gaseous** sample, with a support layer carrier particles with an immobilised **fluorescent indicator**, the support is a **polymer** film (1), transparent to the initiating and radiation, the single carrier particles (3) with the immobilised **fluorescent indicator** are fixed with only a part (4) of their surface in a layer (2), bonded to the support, of a thermoplastically deformable material which assumes duroplastic properties after the carrier particles have been pressed into it, the other part (5) of their surface being immersed in an optically transparent layer (6) of hydrogel which hooks onto the carrier particles and **coats** the bonded layer (2).

USE/ADVANTAGE - The **sensors** can be made simply and in large numbers, have large effective surface, carry the **fluorescent indicator** in a qausi-aqueous solution instead of in a hydrophobic material, and can react to varying parameters with a short response time. The optical insualtion forms an integral part of the **sensor** layer. Applns. of the **sensor** include determn. of pH, or partial pressure of **CO2**, and oc **O2**. The **sensor** can be attached to e the end of an optical conductor. (First major country equivalent to AT8801974-A)

2/3

Dwg.2/3
FS CPI EPI GMPI
FA AB; GI
MC CPI: A12-L03; A12-L04; J04-C
EPI: S03-E04
ABEQ EP 354204 A UPAB: 19930923
In an optical **sensor** for determn. of at least one parameter of a liq. or **gaseous** sample, with a support layer carrier particles with an immobilised **fluorescent indicator**, the support is a **polymer** film (1), transparent to the initiating and radiation, the single carrier particles (3) with the immobilised **fluorescent indicator** are fixed with only a part (4) of their surface in a layer (2), bonded to the support, of a thermoplastically deformable material which assumes duroplastic properties after the carrier particles have been pressed into it, the other part (5) of their surface being immersed in an optically transparent layer (6) of hydrogel which hooks onto the carrier particles and **coats** the bonded layer (2).

USE/ADVANTAGE - The **sensors** can be made simply and in large numbers, have large effective surface, carry the **fluorescent indicator** in a qausi-aq. soln. instead of in a hydrophobic material, and can react to varying parameters with a short response time. The optical insulation forms an integral part of the **sensor** layer. Apples. of the **sensor** include determn. of pH, or partial pressure of **CO2**, and oc **O2**. The **sensor** can be attached to e the end of an optical conductor. (First major country equivalent to AT8801974-A)

2/3
ABEQ US 5114676 A UPAB: 19930923
Optical thin-film **sensor** comprises (a) a **polymer** support film which is transparent to excitation and emission radiation;

(b) a thin transparent layer of thermoplastic material adhered to this; (c) an optically transparent hydrogel layer covering (b); and (d) carrier particles contg. an immobilised **fluorescent indicator.**

Part of (d) is bonded to (b), and has thermosetting properties after being pressed in. Another part of (d) extends into (c) and mechanically anchors it.

USE - For determining 1 or more parameter in a liq. or **gaseous** sample.

ABEQ EP 354204 B UPAB: 19950518

An optical **sensor** for determining one or more parameters in a liquid or **gaseous** sample, comprising a carrier layer which is provided with carrier particles and a **fluorescent** indictor immobilized thereon, wherein the carrier layer is configured as a **polymer** foil transparent to both excitation and emission radiation, and wherein the individual carrier particles (3;9) carrying the **fluorescent indicator** in immobilized form are attached with only part (4) of their surface to a layer (2) adhering to the **polymer** foil (1), which layer (2) is formed by applying a thermoplastic material including a solvent, the carrier particles being mechanically attached by the application of heat and pressure after drying of the solvent, and which assumes thermosetting properties after the carrier particles (3;9) have been pressed in, and wherein the individual carrier particles (3;9) extend with the other part of their surface into an optically transparent hydrogel layer (6) covering the adhesive layer (2), in which hydrogel layer (6) the carrier particles (3;9) are anchored mechanically.

Dwg.1-3/3

L141 ANSWER 39 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
AN 1989-272035 [38] WPIX
CR 1990-375982 [50]; 1991-275602 [38]; 1992-398027 [48]; 1993-196242 [24]; 1996-259062 [26]; 1997-043154 [04]; 1997-404727 [38]; 1998-008901 [01]; 1999-105121 [09]
DNC C1989-120407
TI Detection of microorganisms in clinical specimens - uses growth medium and sealed container with **sensing** and **indicators** to detect microorganisms.
DC A89 A96 B04 D16
IN CALANDRA, M J; DIGUISEPPI, J L; DRISCOLL, R C; THORPE, T C; TURNER, J E
PA (ALKU) AKZO NV; (ALKU) AKZO NOBEL FASER AG; (ALKU) AKZO NOBEL NV
CYC 20

PI	EP 333253	A	19890920 (198938)*	EN	11	
	R: AT BE CH DE ES FR GB GR IT LI NL SE					
	AU 8931288	A	19890921 (198946)			
	DK 8901238	A	19890916 (198948)			
	JP 02016965	A	19900119 (199009)			
	ZA 8901788	A	19900328 (199017)			
	US 4945060	A	19900731 (199033)		9	
	ES 2031807	T1	19930101 (199305)			C12M001-34
	EP 333253	B1	19950809 (199536)	EN	14	C12M001-34
	R: AT BE CH DE ES FR GB GR IT LI NL SE					
	DE 68923720	E	19950914 (199542)			C12M001-34
	ES 2031807	T3	19951216 (199606)			C12M001-34
	IE 67634	B	19960417 (199628)			C12M001-34
	CA 1339512	C	19971028 (199804)			C12Q001-04
	JP 2862556	B2	19990303 (199914)		8	C12M001-34
	KR 9703150	B1	19970314 (199936)			C12Q001-00

ADT EP 333253 A EP 1989-200554 19890306; JP 02016965 A JP 1989-61990 19890314; ZA 8901788 A ZA 1989-178 19890808; US 4945060 A US 1988-168291 19880315; ES 2031807 T1 EP 1989-200554 19890306; EP 333253 B1 EP 1989-200554 19890306; DE 68923720 E DE 1989-623720 19890306, EP 1989-200554 19890306; ES 2031807 T3 EP 1989-200554 19890306; IE 67634 B IE 1989-746 19890307; CA 1339512 C CA 1989-593584 19890314; JP 2862556 B2 JP 1989-61990 19890314;

KR 9703150 B1 KR 1989-3105 19890314
FDT ES 2031807 T1 Based on EP 333253; DE 68923720 E Based on EP 333253; ES 2031807 T3 Based on EP 333253; JP 2862556 B2 Previous Publ. JP 02016965
PRAI US 1988-168291 19880315
REP 1.Jnl.Ref; A3...9003; AU 472420; FR 2603684; JP 57207861; No-SR.Pub; US 2880070; 2.Jnl.Ref; US 4456380
IC ICM C12M001-34; C12Q001-00; C12Q001-04
ICS C12Q001-06; C12Q001-22; **G01N021-77**; G01N033-84
AB EP 333253 A UPAB: 19990603
A device for detecting microorganisms in a specimen comprises a sealable sterilizable vessel in which a specimen may be cultured with a sterile culture medium, a transparent section in the wall of the vessel with a **sensor** attached to the internal surface of the vessel in the region of the transparent section. The **sensor** has an **indicator** and changes in the **indicator** resulting from pH change or change in C02 concentration in the medium are detected from outside the vessel.

USE/ADVANTAGE - A device and apparatus for continuously monitoring changes in pH or C02 in a clinical specimen using a growth medium and sealed container without entering the container after the sample is prepared and the container sealed.

Dwg.0/4
FS CPI
FA AB; DCN
MC CPI: A12-L04; A12-V03; A12-W05; A12-W11L; B04-B02B; B05-C04; B11-C07B2; B11-C08; B12-K04A4; D05-H04; D05-H05; D05-H06; D05-H09
ABEQ US 4945060 A UPAB: 19930923
Device for monitoring biological activity comprises a sealed, sterilised container contg. a biological species in a nutrient medium contg. a non-**fluorescent** indicaor, in which one or more **sensors** are immersed; at least part of the container is transparent, so that changes in **colour** or appearance can be monitored by reflectance, turbidity, absorbence or other optical methods; and the pH of the medium, **CO2** and **O2** contents, etc. can be monitored with corresp. ion specific electrodes in the medium.

USE - The process is applicable to the assessment of microbial contamination in a wide range of clinical samples, food prods, etc. @
ABEQ EP 333253 B UPAB: 19950918
A device for detecting microorganisms in a specimen comprising a sealable, sterilisable, specimen container, having an internal chamber in which a specimen may be cultured with a sterile culture medium to detect microbial contamination in the specimen and having at least one transparent section in the wall of said container, and a **sensor** means affixed to the internal surface of the wall of said container in the region of the transparent section, whereby changes in the appearance of the **sensor** means can be detected from the exterior of said container through said transparent section, said **sensor** means comprising an immobilised **indicator** medium, the **indicator** medium being selected for its ability to exhibit a detectable change when exposed to products of an organism's metabolic activity, said **indicator** medium being immobilised by bonding the **indicator** to a support medium or encapsulating the **indicator** within a **polymer matrix.**
Dwg.0/4

L141 ANSWER 40 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
AN 1989-241329 [33] WPIX
DNN N1989-183937 DNC C1989-107502
TI Fibre optic chemical **sensor** production - by contacting optical fibre waveguide with a **polymer** compsn., **photocrosslinking** the compsn. and absorbing a **dye.**
DC A14 A89 L03 P81 S03 V07
IN BLAYLOCK, M E

PA (CRDC) CORDIS CORP
CYC 1
PI US 4842783 A 19890627 (198933)* 6
ADT US 4842783 A US 1987-92645 19870903
PRAI US 1987-92645 19870903
IC B29D011-00; G02B006-02
AB US 4842783 A UPAB: 19930923
A method for making a fibre optic chemical **sensor** for monitoring at least one parameter of a fluid comprises (a) preparing a **photocrosslinkable** gel-forming **polymer** compsn. including a **photopolymer** component that **crosslinks** when subjected to actinic radiation and a solvent within which the **photopolymer** component is soluble, (b) contacting the **photocrosslinkable polymer** compsn. with a portion of an optical fibre waveguide so that it adheres, (c) subjecting the **photocrosslinkable polymer** compsn. to actinic radiation while the compsn. is adhered to the portion of the optical fibre waveguide to **photocrosslink** the compsn. into a **photocrosslinked polymeric** gel member and (d) absorbing a **dye** component into the gel member, the **dye** component being responsive to a parameter of the fluid to be monitored.

The **photopolymer** component may be a vinyl-type base **polymer** component, e.g., of the vinyl aromatic type and the base **polymer** may be modified by covalent attachment of e.g. vinyl gps. or acrylic gps. The **photocrosslinkable** compsn. may include vinyl-containing or acrylic-containing monomers or **polymers** and the gel member may be swellable to at least 1000 times its dry volume The gel member may have electrically charged moieties and the **dye** component oppositely charged.

USE/ADVANTAGE - The chemical **sensors** can be used for monitoring, detecting and/or measuring parameters such as pH, **oxygen** concentration, **CO2** concentration, metal ion concentration and glucose concentration at locations remote from detection instrumentation. Using the method it is possible to rapidly and efficiently provide a fibre optic chemical **sensor** having a **polymeric** gel that suitably positions the **dye** material.

2/4
FS CPI EPI GMPI
FA AB; GI
MC CPI: A04-C01; A11-C02B; A12-L03A; L03-D04; L03-G02
EPI: S03-E03X; **S03-E04E**; V07-X

L141 ANSWER 41 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
AN 1988-272930 [39] WPIX
DNN N1988-207300 DNC C1988-121463
TI Chemical **sensor** - with reagent on porous adsorbent unitary support adjacent to optical fibres.
DC J04 S03
IN BOISDE, G; PEREZ, J J; PEREZ, J
PA (COMS) COMMISSARIAT ENERGIE ATOMIQUE
CYC 7
PI EP 284513 A 19880928 (198839)* FR 9
R: CH DE FR GB IT LI
FR 2613074 A 19880930 (198846)
US 4907037 A 19900306 (199016)
EP 284513 B1 19940601 (199421) FR 12 G01N021-75
R: CH DE FR GB IT LI
DE 3889757 G 19940707 (199427) G01N021-75
ADT EP 284513 A EP 1988-400719 19880324; US 4907037 A US 1988-169958 19880318; EP 284513 B1 EP 1988-400719 19880324; DE 3889757 G DE 1988-3889757 19880324, EP 1988-400719 19880324
FDT DE 3889757 G Based on EP 284513
PRAI FR 1987-4299 19870327

REP 2.Jnl.Ref; A3...9018; EP 72627; No-Sr.Pub; US 4295470; US 4577109; 02Jnl.Ref
IC G01N021-75; G01N033-52
ICM G01N021-75
ICS **G01N021-64**; G01N033-52
AB EP 284513 A UPAB: 19930923
A chemical **sensor** has a reagent on a porous adsorbent unitary support immersed in a fluid to be tested, an optical fibre directing light onto the support, and another optical fibre collecting light from the support. The support is pref. of porous **silica** or synthetic resin, and may be of polyacrylamide or styrene-divinylbenzene **copolymer.** The reagent may be thymol blue, **fluorescein**, bromophenol blue or phenol red.
USE/ADVANTAGE - For measuring pH or **oxygen** or **carbon dioxide** concentrations in medicine or agriculture. The reagent does not have to be protected by a membrane.
1/4
FS CPI EPI
FA AB; GI
MC CPI: J04-C04
EPI: S03-E04D; **S03-E04E**; S03-E14A
ABEQ US 4907037 A UPAB: 19930923
Active chemical transducer comprises an emitting optical fibre (2) and several receiving optical fibres (4) round the emitting fibre, in a cylindrical sheath (8) e.g. of stainless steel. A ball (10) e.g. of **copolymer**, faces the planar ends of the fibres, having an appropriate reagent, such as a **coloured indicator**, linked by covalence to the **copolymer.** The ball is held by spacers (12, 14) and the sheath has windows (18) so that the ball is in direct contact with the soln. to be studied.
ADVANTAGE - No membrane is used and transducer can be sterilised a number of times.
ABEQ EP 284513 B UPAB: 19940715
Active chemical transducer with optical fibres for measuring a given characteristics of a fluid medium, said transducer having at least one assembly with a reagent appropriate for said measurement and intended to interact with the fluid medium, means (10,52) for supporting the reagent, an optical fibre (2,46), called the emitting fibre and used for transmitting light in the direction of the support means (10,52) and at least one other optical fibre (4), called the receiving fibre, which recovers at least part of the light from the support means (10,52), when the latter receive the light from the emitting fibre (2,46), the transducer being characterised in that the support means have a single, completely porous and adsorbing element (10,52), to which is fixed the reagent and which is positioned facing the emitting fibre (2, 46) and each receiving fibre (4), said element (10,52) being in direct contact, by the quasi-totality of its outer surface, with the fluid medium when the transducer is immersed in the latter, so that the element (10,52) has no confinement membrane.
Dwg.1/4

L141 ANSWER 42 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
AN 1988-008549 [02] WPIX
DNN N1988-006085 DNC C1988-003780
TI **Sensor** system using fluorometric decay measurements - used for measuring **oxygen** partial pressure, pH, **carbon di oxide** or temperature in an organ or a body.
DC A89 B04 J04 P31 S03 S05 V07
PA (SCHU-I) SCHULZE J E; (SHUL-I) SHULZE J E
CYC 6
PI EP 252578 A 19880113 (198802)* EN 15
R: DE FR GB IT NL
US 4895156 A 19900123 (199011) 13

ADT EP 252578 A EP 1987-303362 19870415; US 4895156 A US 1986-881139 19860702
PRAI US 1986-881139 19860702
REP No-SR.Pub
IC A61B005-00; G01K011-20; **G01N021-64**
AB EP 252578 A UPAB: 19930923
A measurement system for analysis of fluid components inside a body comprises (a) pulse generator for generating a member of time related pulses, (b) a fibre-optic equipped catheter having at least its distal portion located in an organ or a body in which a fluid component concentration is
to be measured, the catheter having at least one fluorometric **sensor** deployed to **sense** fluid concentration in communication with one or more fibre optic light pipes within the catheter, the fluorometric **sensor** producing a **fluorescent** output in response to a light input, the **fluorescent** output having a lifetime **indicative** of the fluid concentration in the environment of the fluorometric **sensor**, (c) a light source responsive to one or more of the pulses to generate pulses of output light and for directing a portion of the light into an input of the fibre-optic light pipe-equipped catheter, (d) a **photosensor** positioned outside the body for **sensing** the **fluorescent** output of the fluorometric **sensor** conveyed by one of the fibre optic light pipes and (e) an analyser for analysing the **fluorescent** output with respect to time to obtain a lifetime signal related to the lifetime of the fluorometric **sensor.**
Pref. the fluorometric **sensor** is a **fluorophor/ polymer matrix** in which the **polymer** is e.g. silicon rubber, a **copolymer** of silicon and polycarbonate, a **copolymer** of silicon and polystyrene or an ion exchange resin.
USE - The **sensor** system is used for measuring **oxygen** partial pressure, pH, **CO2** or temperature in an organ or a body.
1/5
FS CPI EPI GMPI
FA AB; DCN
MC CPI: A12-V03C2; B04-C03B; B04-C03D; B05-C04; B05-C08; **B11-C07B3**; B12-K04A; J04-B01
EPI: S03-B01X; S03-E04D; S05-D01X; V07-N
ABEQ US 4895156 A UPAB: 19930923
System for measuring fluid component concn. in a body comprises a fibre optic catheter with a fluorometric **sensor** having a **fluorescent** output with decay **indicative** of concn. The probe is excited by a pulsed light source, and the catheter outputs to a distal end **photosensor**, the output of which is sampled to provide decay signals to an analyser obtaining a lifetime signal related to concn. A processor visually **indicates** concn. using the lifetime signal and the expression To/T=1+KgTo(Q) where To is lifetime in absence of component, T is measured lifetime in presence of component concn. (Q), and Kg is bimolecular quenching factor. The values of To and Kg are compensatingly adjusted w.r.t. measured temp. The **sensor** pref. comprises tris(4,7-diphenyl-1,10-phenanthroline) RuII complex ion or **fluorescein** amine in silicone rubber, **copolymer** of silicone with polycarbonate or polystyrene, or an ion-exchange resin.
USE/ADVANTAGE - Esp. for measuring pO2, pH or **CO2**, is relatively inexpensive and gives improved results.
0

L141 ANSWER 43 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
AN 1987-307035 [44] WPIX
DNN N1987-229627 DNC C1987-130813
TI **Sensor** for determn. of dissolved substance in aqueous medium - comprises optical fibre organic **polymer** with **fluorescent** organic substituents covalently bonded through ester or amide linkages.

DC A14 A89 B04 J04 P31 P83 S03
IN MATTHEUS, R S; RHUM, D; MATTHEWS, R S
PA (PFIZ) PFIZER HOSPITAL PROD GROUP INC; (HOWN) HOWMEDICA INC; (HOWM-N) HOWMEDICA INC
CYC 21
PI AU 8768718 A 19870917 (198744)* 49
JP 62191740 A 19870822 (198739)
EP 244929 A 19871111 (198745) EN
R: AT BE CH DE ES FR GB GR IT LI LU NL SE
DK 8700703 A 19870814 (198748)
BR 8700677 A 19871215 (198804)
ZA 8701023 A 19880815 (198844)
JP 02025138 B 19900531 (199026)
US 5019350 A 19910528 (199124)
CA 1288029 C 19910827 (199139)
EP 244929 B1 19940420 (199416) EN 25 G01N021-64 <--
R: AT BE CH DE ES FR GB GR IT LI LU NL SE
DE 3789631 G 19940526 (199422) G01N021-64 <--
ES 2062978 T3 19950101 (199508) G01N021-64 <--
ADT AU 8768718 A AU 1987-68718 19870212; EP 244929 A EP 1987-301237 19870212; ZA 8701023 A ZA 1987-1023 19870212; JP 02025138 B JP 1987-31303 19870213; US 5019350 A US 1986-829350 19860213; EP 244929 B1 EP 1987-301237 19870212; DE 3789631 G DE 1987-3789631 19870212, EP 1987-301237 19870212; ES 2062978 T3 EP 1987-301237 19870212
FDT DE 3789631 G Based on EP 244929; ES 2062978 T3 Based on EP 244929
PRAI US 1986-829350 19860213
REP A3...9009; AT 379688; DE 3001669; EP 105870; EP 53937; EP 99266; No-SR.Pub; US 3941750
IC A61B005-00; C08J000-00; C08L000-00; **G01N021-78**; **G01N031-22**; G01N033-52; G03C000-00
ICM **G01N021-64**
ICS A61B005-00; C08J000-00; C08L000-00; **G01N021-78**; **G01N031-22**; G01N033-52; G01N033-84; G03C000-00
AB AU 8768718 A UPAB: 19940622
(1) **Sensor** for determn. of the coincn. of a dissolved substance (I) in an aqueous medium comprises an optical fibre having at the distal end an adherent water-insol. organic **polymer** having a plurality of **fluorescent** organic substituents covalently bound to the **polymer** through ester or amide linkages. (2) **Fluorescent polymeric indicator** for determn. of the concentration of (I) in an aqueous medium comprises an organic **polymer** having a plurality of **fluorescent** organic substituents covalently attached to it through ester or amide linkages.
USE/ADVANTAGE - With the **sensor** the **polymer indicator** is more stable and is not readily leached from or washed away by the aqueous test medium containing (I). The medium is especially a body fluid such as blood and (I) is **O2** or **CO2**, and the pH may also be measured at the same time. The **sensor** is **sensitive**, has a short response time and bio-inert as well as stable.
Dwg.0/0
FS CPI EPI GMPI
FA AB; DCN
MC CPI: A09-A02; A10-E07; A10-E17; A12-V03C2; B04-B04D5; B04-C03B; B05-C04; B05-C08; B06-A01; B08-C01; **B11-C07B3**; B12-K04; J04-B01; J04-C04
EPI: S03-E04D; **S03-E04E**; S03-E09E; S03-E14H
ABEQ US 5019350 A UPAB: 19930922
Sensors for determining the concn. of dissolved substances in aq. media comprises an optical fibre which has an adherent, water-insoluble, stable, rapid response **fluorescent polymeric indicator** (I) bound to its distal end.

(I) comprises an organic **polymer** (II) covalently bonded through ester or amide linkages to **fluorescent** organic substits. (III) which may be the same or different. (II) has OH or NH2 gps. depending from the chain and (III) has gps. which can form ester or amide linkages with them while not interfering with the **fluorescent** properties. (II) is pref. a hydroxyethyl methacrylate **polymer** or its **copolymer** with methyl methacrylate or is polyvinyl alcohol. (III) is pref. 4-(1-pyrene)-butanoic acid or 4-umbelliferonyl acetic acid.

USE/ADVANTAGE - In measuring **O2** and **CO2** concn. in blood. The **indicator** is not leached from the device.

ABEQ EP 244929 B UPAB: 19940608

A **sensor** for the determination of the concentration of a dissolved substance in an aqueous medium comprising an optical fibre having bonded or adhered to one end thereof a stable, rapid-response **fluorescent polymeric indicator**, the **indicator** comprising an organic **polymer** having a plurality of **fluorescent** organic substituents, which may be the same or different, covalently bonded to said **polymer** through ester or amide linkages.

Dwg.0/0

=> d his

(FILE 'HOME' ENTERED AT 07:08:42 ON 29 JUN 2004)
SET COST OFF

FILE 'HCAPLUS' ENTERED AT 07:09:00 ON 29 JUN 2004

```
L1            1 S US20030133123/PN OR US2002-041661#/AP,PRN
              E YEH M/AU
L2           49 S E3,E6
              E YEH MING/AU
L3           30 S E3,E19-E21
L4            1 S E42
              E BECTON/PA,CS
L5         1107 S (BECTON?(L)DICKINSON?)/PA,CS
              E SENSOR/CT
L6        25145 S E13
L7        11473 S E14-E49
              E E13+ALL
L8        36723 S E5,E4,E12
L9        74035 S E4+OLD,NT,PFT
              E SENSOR/CW
L10       48135 S E5
L11       74598 S L6-L10
L12      152052 S ?SENSOR OR ?SENSORS
L13      162791 S L11,L12
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FILE 'REGISTRY' ENTERED AT 07:17:35 ON 29 JUN 2004

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L14           1 S OXYGEN/CN
L15           1 S CARBON DIOXIDE/CN
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FILE 'HCAPLUS' ENTERED AT 07:17:52 ON 29 JUN 2004

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L16       16209 S (L14 OR O2 OR OXYGEN) AND L13
L17        1468 S (L15 OR CO2 OR CARBON DIOXIDE) AND L16
              E GAS/CT
              E E6+ALL
L18       11972 S L13 AND E2+NT
              E E6+ALL
L19         497 S L13 AND E4+NT(L)(ANT OR ANST)/RL
L20       13370 S L17,L18,L19
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L21          20 S L20 AND ACID(S)BASE(S)INDICAT?
                E ACID BASE/CT
                E ACID-BASE/CT
                E E13+ALL
L22          13 S L20 AND E4,E3+NT
                E E2+ALL
L23          56 S L20 AND E2+OLD,NT,PFT
L24          62 S L21-L23
                E CHROMOPHORE/CT
L25          22 S L20 AND E9,E7,E4+OLD,NT,PFT
                E DYE/CT
L26          57 S L20 AND E64+OLD,NT,PFT
                E FLUOROPHORE/CT
                E E4+ALL
                E E2+ALL
L27          53 S L20 AND E5,E4+NT

     FILE 'REGISTRY' ENTERED AT 07:25:48 ON 29 JUN 2004
L28           1 S 76-59-5
L29           1 S 1733-12-6
L30           1 S 21329-70-4
L31           1 S 63373-04-6
L32          13 S 63373-04-6/CRN
L33           1 S 36536-22-8
L34           1 S 48221-03-0
L35          26 S 48221-03-0/CRN

     FILE 'HCAPLUS' ENTERED AT 07:28:09 ON 29 JUN 2004
L36          43 S L28-L35 AND L20
L37         175 S L24-L27,L36
L38          19 S L37 AND ?POLYMER?(L)MATRIX
L39          31 S L37 AND POLYMER?/CW
L40          42 S L38,L39
L41           0 S L37 AND (PREMIX? OR PRE MIX?)
L42          12 S L37 AND (?CROSSLINK? OR ?CROSS LINK?)
L43          48 S L40,L42

     FILE 'REGISTRY' ENTERED AT 07:31:01 ON 29 JUN 2004
L44           1 S 7631-86-9
L45           1 S 7440-06-4

     FILE 'HCAPLUS' ENTERED AT 07:31:04 ON 29 JUN 2004
L46         707 S L20 AND (L44 OR SIO2 OR SILICA OR SILICON DIOXIDE OR SILICON
L47          50 S L46 AND ?POWD?
L48        1982 S L20 AND (L45 OR PT OR ?PLATINUM?)
L49          12 S L48 AND L37
L50          27 S L46 AND L37
L51           3 S L47 AND L37
L52          69 S L43,L49-L51
L53          67 S L52 AND (PD<=20020110 OR PRD<=20020110 OR AD<=20020110)
L54          36 S L2-L5 AND L13
L55           5 S L54 AND L20
L56          31 S L54 NOT L55
                SEL DN AN 14
L57           1 S L56 AND E1-E3
L58         349 S L20 AND (?SILOXANE? OR ?SILANE?)
                E POLYSILOXANE/CT
                E POLYSILOXANES/CT
L59          91 S E3 AND L20
                E SILOXANE/CT
                E SILOXANES/CT
L60         221 S (E3+OLD,NT,PFT OR E4+OLD,NT,PFT OR E8) AND L20
L61         350 S L58-L60
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L62             0 S CYCLIC(L)VINYLMETHYL(L)DIMETHYL(L)SILOXANE
L63             0 S CYCLIC(L)VINYLMETHYL(L)DIMETHYLSILOXANE
L64            83 S ?VINYLMETHYL?(L)?DIMETHYLSILOXAN?
                  E CYCLOSILOXANE/CT
                  E E29+ALL
L65          7131 S E7+NT
L66             4 S L20 AND L65
L67             3 S ?VINYLMETHYLDIMETHYLSILOX?
                  SEL RN

     FILE 'REGISTRY' ENTERED AT 07:57:30 ON 29 JUN 2004
L68            34 S E1-E34
L69            13 S L68 AND SI/ELS
L70             1 S L69 AND C3H8O2SI
L71             2 S 9016-00-6 OR 31900-57-9
L72         69684 S SI/ELS AND PMS/CI

     FILE 'HCAPLUS' ENTERED AT 07:59:37 ON 29 JUN 2004
L73            49 S L70,L71 AND L20
L74           353 S L61,L66,L73
                  SEL RN L37
                  DEL SEL

     FILE 'REGISTRY' ENTERED AT 08:00:50 ON 29 JUN 2004

     FILE 'HCAPLUS' ENTERED AT 08:00:50 ON 29 JUN 2004
                  SET SMARTSELECT ON
L75           SEL L37 1- RN :    1134 TERMS
                  SET SMARTSELECT OFF

     FILE 'REGISTRY' ENTERED AT 08:00:54 ON 29 JUN 2004
L76          1134 S L75
L77            16 S L76 AND L72
L78            53 S L76 AND SI/ELS
L79            53 S L77,L78
L80             1 S L79 AND C8H18OSI2

     FILE 'HCAPLUS' ENTERED AT 08:03:42 ON 29 JUN 2004
L81             1 S L80 AND L20
L82            20 S L73 AND (SENSOR ARRAY OR LASER OR BINARY OR MATRIX OR SENSING
L83             4 S L82 AND 1ST AND 2ND
                  SEL DN AN L82 18
L84             1 S L82 AND E1-E3
L85            26 S L52 AND L61,L64-L67,L73-L74
L86            24 S L85 NOT L82
                  SEL DN AN L86 3 4 7 8 12-14 16 20-22 24
L87            12 S L86 NOT E4-E39
L88            19 S L1,L57,L81,L83,L84,L87
L89            19 S L88 AND L1-L13,L16-L27,L36-L43,L46-L67,L73-L74,L81-L87
L90            19 S L89 AND (?SENS? OR GAS? OR O OR O2 OR OXYGEN OR CO2 OR CARBON
L91             9 S L90 AND ?FLUORES?
L92            19 S L90,L91

     FILE 'HCAPLUS' ENTERED AT 08:28:09 ON 29 JUN 2004
L93            14 S L92 AND (L14 OR L15)
L94            19 S L92,L93

     FILE 'HCAPLUS' ENTERED AT 08:29:19 ON 29 JUN 2004

     FILE 'WPIX' ENTERED AT 08:29:40 ON 29 JUN 2004
L95             1 S L1
L96        479310 S ?SENSOR?/BIX
L97          3611 S A12-L04B/MC
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L98      481670 S L96,L97
L99        3237 S L98 AND ((G01N021-64 OR G01N021-77 OR G01N021-78 OR G01N031)/
L100        411 S L99 AND (OXYGEN OR O2 OR 1779/DRN OR R01779/DCN)
L101        211 S L99 AND (CO2 OR CARBON()(DIOXIDE OR DI OXIDE) OR 1066/DRN OR
L102        112 S L100 AND L101
                E R09609+ALL/DCN
                E R07186+ALL/DCN
L103       3787 S L98 AND Q505/M0,M1,M2,M3,M4,M5,M6
L104        818 S L103 AND ((G01N021-64 OR G01N021-77 OR G01N021-78 OR G01N031)
L105        143 S L104 AND (OXYGEN OR O2 OR 1779/DRN OR R01779/DCN)
L106         73 S L104 AND (CO2 OR CARBON()(DIOXIDE OR DI OXIDE) OR 1066/DRN OR
L107        112 S L100,L105 AND L101,L106
L108        112 S L102,L107
L109         45 S L108 AND ?POLYM?/BIX
L110         13 S L108 AND (Q12? OR Q13?)/M0,M1,M2,M3,M4,M5,M6
L111         47 S L109,L110
L112          1 S L108 AND W?/M0,M1,M2,M3,M4,M5,M6
L113          2 S L108 AND (E21-? OR E22-? OR E23-? OR E24-? OR E25-? OR E26-?)
L114          2 S L112,L113
L115          2 S L95,L114
L116         45 S L111 NOT L115
                SEL DN AN 4 7 10 20 28 29 31 34 36 45
L117         35 S L116 NOT E1-E30
L118         37 S L115,L117
                E BECTON/PA
L119       2434 S E3-E35
L120         15 S E37-E40
L121         91 S L98 AND L119,L120
                E PECT/PACO
                E BECT/PACO
L122         91 S E3-E5 AND L98
L123         91 S L121,L122
                E YEH M/AU
L124        125 S E3,E5
                E MING/AU
L125         14 S E41,E44,E56
L126          4 S L124,L125 AND L119,L120
L127         40 S L118,L126
L128          4 S L123 AND L127
L129         40 S L127,L128
L130         23 S L123 AND L99,L103
L131          4 S L123 AND L104
L132          5 S L130,L131 AND L100-L102,L105-L108
L133          5 S L131,L132 NOT L129
                SEL DN AN 1 4
L134          3 S L133 NOT E1-E6
L135         43 S L129,L134
L136         15 S L130 NOT L131-L135
L137         67 S L123 NOT L127-L136
L138         43 S L135 AND (?SENS? OR GAS? OR O2 OR O OR OXYGEN? OR CO2 OR CARB
L139         21 S L135 AND (?CROSSLINK? OR ?CROSS LINK? OR ?POWD? OR CATALY? OR
L140          5 S L135 AND ?RESPIR?/BIX
L141         43 S L135,L138-L140

     FILE 'WPIX' ENTERED AT 09:24:11 ON 29 JUN 2004

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